ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT,

BOMBAY PRESIDENCY,

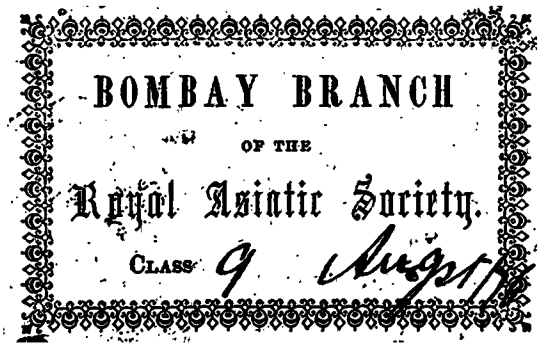
FOR THE YEAR

1875-76.

ROYAL ASIATIC SOCIETY LIBRARY OF THE BOMBAY BRANCH OF THE

Bombay:
PRINTED AT THE GOVERNMENT CENTRAL PRESS.

1876.



Digitized with financial assistance from the Government of Maharashtra on 11 July, 2017

ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT, BOMBAY,

FOR THE YEAR 1875-76.

ACCOUNTS.

Appended to this report will be found detailed statements of the grants and outlay on the various main heads and sub-heads of the Budget. Exclusive of Establishments and Contribution works, the total grant was 90½ lakhs, and the total outlay 77 lakhs, resulting in a lapse of 13½ lakhs, of which 1½ lakhs is Imperial, Ordinary, 1¾ lakhs Imperial, Agricultural, 1½ lakhs Provincial, and 8¾ lakhs Local Funds.

2. *Imperial, Ordinary.*—The grant was 18¼ lakhs, and the expenditure 16¾ lakhs, difference 1½ lakhs, of which 1 lakh is Military, and ½ lakh Civil Buildings; the former sum is due to short outlay on the barracks at Colaba and Purandhar, the military prison at Poona, and the Ordnance buildings at Kirkee, the school and coffee-shop at Satara, the coal-sheds at Muscat, the contagious diseases ward of the Native Infantry Hospital at Belgaum, and lighting with gas the troop-shed, &c., at Carnac Bunder; of the latter sum Rs. 17,500 is due to Pátri Railway, and buildings for the Salt Establishment in the Uran Taluka, and about ¼ of a lakh to the signallers' quarters at Bombay and Bhusáwal, and to the non-prosecution of the Telegraph Offices at Hubli and Surat. There was an excess of Rs. 18,342 on the provision for Establishments, which is due to its having been calculated in a different manner to that subsequently ordered in Government of India No. 399 A. J. of 8th December 1875.

3. *Imperial, Agricultural.*—The grant for works was 20 lakhs, and the outlay 18¼ lakhs There has been a saving of 2¼ lakhs on the Extraordinary, and an excess of ½ lakh on the Ordinary grant. The former is chiefly due to the Mutha and Háthmati Canals, and the latter to the transfer of the Sakkhar Canal, provided in the Budget under Extraordinary, to the Ordinary grant. The excess under Ordinary Establishment is due to the non-execution of works from the Extraordinary grant to the extent provided for in the Budget.

4. *Provincial.*—Whilst there has been a short outlay of a little less than 1½ lakhs, there has been, on the other hand, an excess of Rs. 80,088 under Establishment. Of the saving of 1½ lakh, 1 lakh is on the grants for new Sailors' Home and High Court, Bombay, and Rs. 31,895 on that for Communications.

5. *Contributions.*—The principal items comprising the expenditure from this source are as under:—

Shaik Othman Duct	Rs.	8,669
Girgaum Church	„	6,442
University Library and Clock Tower	„	41,273
Elphinstone High School	„	24,700
Fort Christian School	„	8,592
New Sailors' Home	„	27,268
European and Indo-European, Guzerati Mission, & Anglo-Vernacular School, Kurrachee	„	21,356
Bridge over the Krishna River	„	1,32,693
Do. Panchganga River	„	17,800

6. The actual toll realizations, plus the balance, Rs. 78,245, at the beginning of the last year, amounted to Rs. 6,15,698, against which Rs. 4,86,479 were written back for outlay incurred on the repairs of Provincial lines of roads, leaving a balance of Rs. 1,29,219 available for expenditure during the current year.

7. *Local.*—Of the saving of 8¾ lakhs, ¾ lakh is under Civil Buildings, School-houses and Cattle Pounds, 5¾ lakhs under Communications, over ¾ lakh under Miscellaneous Public Improvements, and 1½ lakh under Repairs. The short outlay has resulted in a saving on Establishment of Rs. 92,120.

8. The expenditure incurred from Local Loans and that debitable to Forest and Telegraph Departments has been as under :—

	Work.	Establishment.
	Rs.	Rs.
Local Loans { Tapti Bridge	3,16,749	22,172
Local Loans { Indápur Tank	3,583	511
Forest Department	23,846	...
Telegraph do.	13,791	3,443
	3,57,969	26,126

9. The total expenditure, inclusive of Establishment, during the year has been as follows :—

Imperial	Rs.	45,08,930
Provincial	,,	33,02,624
Contributions...	,,	8,44,613
Local	,,	21,06,877
Local Loans, &c.	,,	3,84,095
	Rs.	1,11,47,139

10. The cost of Establishment has been Rs. 22,50,191, which gives a percentage of 25·29 on the outlay in India of Rs. 88,96,948; but if the expenditure in England on account of Imperial, Ordinary, Rs. 45,241, be added to the outlay in India, it gives a percentage of 25·16.

I.—MILITARY.

I.—FORTIFICATIONS.

1. **Bombay.**—The permanent defences have continued under suspension during the whole year, pending the decision of Government on the recommendations made by Colonel Sir W. F. D. Jervois, R.E., after his official visit to Bombay for that purpose in 1871. Nothing of importance has been done at the temporary batteries.

2. **Aden.**—This work was commenced in November 1875, and nearly completed at the close of the year. Temporary batteries to contain four and two 9-inch muzzle-loading rifled guns at West Cliff and Seera Hill respectively, have been completed, with the magazines, &c., whilst a portion of the existing Fort on Ras Morbut has been adapted to receive two heavy guns of the same description. In all cases, however, the racers, not as yet supplied by the Secretary of State, remain to be fixed. The alterations to the Ras Tarshyne Fort to accommodate the remaining two guns were nearly completed. The cost of this work is estimated at Rs. 41,858, of which Rs. 34,570 have been expended.

Mounting ten 9-inch guns in temporary positions.

3. The erection of this building has supplied a want which was felt for many years past, and owing to which it was found impossible to mount a European Guard, except during a few months in the cold weather. The building will accommodate a guard of 2 non-commissioned officers and 6 men, and provides the following accommodation, viz.: guard-room, non-commissioned officers' room, and lock-up with a verandah on two sides. With the exception of laying the tiles (Taylor's pattern) which had been indented for, but not supplied up to the close of the year, the building is complete; but to render it available for early occupation by the troops, the roof has been temporarily covered in with jowlees. Amount of estimate, Rs. 11,265; expenditure, Rs. 10,131.

Guard-room for the Main Pass Gate.

4. The roofs of these buildings originally consisted of round Zanzibar rafters, Aden reeds, bamboo matting, and lime concrete. These have been re-placed with materials of a permanent nature, viz., squared teak joists, planking, and concrete. As the roofs in question have further to act as a terreplein to the parapets of the fortifications above, they have been constructed sufficiently strong to answer that purpose likewise. Amount of estimate, Rs. 19,778; expenditure, Rs. 14,943.

Reconstructing the roofs of the buildings in the fortifications at Perim.

II.—CANTONMENTS.

5. **Na'sik.**—Seeds of various descriptions of forest trees, such as jack, mango, teak, jambool, sandal, kaveet, &c., have been sown, and the seedlings have grown to a considerable height. They have been watered throughout the year, and are in a healthy state. Completed at a cost of Rs. 500.

Nursery for trees in Deolali Cantonment.

6. **Ahmedabad.**—This work, which was in progress in 1874-75, has been completed. The culvert is of 8 feet span with semi-circular arch on abutments 15 feet high. Cost Rs. 4,322.

A culvert of 8 feet span on the Camp and Shahi-baugh road.

III.—ACCOMMODATION FOR TROOPS.

7. **Bombay.**—This work, which was nearly finished in 1874-75, has been completed, with the exception of some of the asphalte flooring of the main buildings, which remains to be done. Each of the dormitories of No. 3 barrack has been divided into 2 compartments by a brick partition wall, thus leaving a length of 39 feet at each end of the barrack, these being used as a canteen and as an orderly room and office, the inner portions being available as dormitories for 10 men each. Adjoining the canteen a liquor store-room, 18 feet by 14 feet, and a corporal's room 22 feet by 14 feet, have been formed by walling in portions of the east and south verandahs. Teak arm racks with stands, shelves with iron brackets, and accoutrement pegs have been provided; and arrangements have been made for supplying Vehar water. Teak battens 5 feet 9 inches by 3 inches for punkahs, on the plan recently adopted, have been suspended by means of iron rods, the connections being of the same material.

Six semi-permanent barracks and their subsidiary buildings for the Royal Artillery at Colaba.

8. The work was commenced on the 21st February last, and was continued until the 15th March 1876, when it was stopped, pending arrangements for the buildings being made available for carrying it on. Nearly ¼th of the whole work has been completed, and almost the whole of the asphalte and bitumen required has been obtained. Amount of estimate, Rs. 1,75,454; expenditure, Rs. 1,54,636.

Asphalting the floors of the main buildings.

9. This work, which was in progress in 1874-75, has been completed at a cost of Rs. 33,388.

Upper-storeyed quarter-guard, cells and lock-up at Colaba.

10. The building, which provides accommodation according to the standard plan, consists of one sitting-room, a bed-room, and a bath-room, with open verandahs on the west and south sides. A detached cook-house, with an open verandah, on the west side has been provided. Completed at a cost of Rs. 3,651.

Quarters for the Provost Serjeant at Colaba.

11. The garrison cells, which were too near the new barrack No. 6, have been pulled down, and re-erected on a site in the compound of Keith Lodge. Asphalte floors have been substituted for Porebunder stone, and some minor improvements have been effected. Completed at a cost of Rs. 8,724.

Removing and re-erecting the cells, &c., at Colaba.

12. These sheds, which were pulled down during the previous year, have been re-erected on a new site between the Bankshall and the Royal Artillery Gun Lascars' Quarters at Colaba. Cost Rs. 3,114.

Removing and re-building hospital servants' sheds at Colaba.

13. The quarters, which are according to the standard plan, consist of two blocks, each containing 12 rooms 14 feet by 16 feet; 2 rooms 18 feet by 16 feet; 8 rooms 14 feet by 10 feet, and 2 rooms 18 feet by 10 feet, with an open verandah 12 feet wide towards the west, and 10 feet wide at the sides and in rear. A part of the rear verandah has been enclosed to form bath-rooms. The height of the main rooms to the bottom of the tie beams is 16 feet. The main roof, which is separated from that of the verandah, has a ridge ventilator, the open spaces being closed in with galvanized iron net-work, to prevent birds getting in. Two cook-rooms, with open verandah in front, and two privies, one for men and one for women, have been provided for each block. The privy for women will be approached by a covered passage from each main block. Block No. 1, with its out-buildings, is nearly finished, the exceptions being the asphalting of the floors, fixing and finishing doors and windows, and finishing the lime plastering and rough cement casting, painting wood-work, and providing cloth ceiling, &c. In No. 2 block the foundations and plinth finished, and the wooden framing for brick-work and roofing almost completed, and the brick-work in progress. Amount of estimate, Rs. 79,376; expenditure, Rs. 51,767.

Quarters for 28 married men of the Royal Artillery at Colaba.

14. *Detail Lines.*—Two new pendalls have been constructed; six pendalls have been re-built, and one repaired. *20th Regiment N. I.*—Fifteen pendalls have been re-built, and two repaired. Amount of estimate, Rs. 69,273; expenditure, Rs. 31,464.

Improvements to the Native Infantry Lines at Boree Bunder.

15. **Aden.**—The floors of the two barracks in the Isthmus Position, as also those of the subsidiary buildings in connection with them, have, during the past year, been covered with asphalte. The stone floors of the verandahs which, owing to the weathering and disintegration of the stone, had become very uneven, have been taken up, and re-laid partially with new materials. Val de Travers' asphalte was used, and after many successive trials the following proportion of materials appeared to give the best results, viz.: asphalte, 9 maunds; bitumen, 22 lbs; sand, 6 maunds of 28 lbs. each. Amount of estimate, Rs. 29,380; expenditure, Rs. 15,518.

Renewing the floors of certain Military buildings in the Isthmus Position.

16. The officers' quarters at Perim have during the past year been entirely re-built, at a cost of Rs. 12,177. The accommodation provided consists of three rooms, with a bath-room at one end. A verandah, 10 feet broad, extends along the front of the building. The upper floor only is used as officers' quarters, the ground floor being utilized as a Commissariat godown and for other purposes.

Improvements to officers' quarters at Perim.

17. The Apothecary's and Assistant Apothecary's quarters have been provided with roofs of a permanent nature in lieu of the existing jowlee roofs. The main roofs are lime terraced, those of the verandah covered with Taylor's tiles. Amount of estimate, Rs. 14,498; expenditure, Rs. 6,549.

Substituting pucka for jowlee roofs to certain regimental buildings.

18. A cook-house, providing a kitchen, cook's room, with a verandah 8 feet broad, has been constructed for the use of the battery of Royal Artillery in lieu of the existing one, which was very inconveniently located with regard to the barracks. Cost Rs. 5,622.

Cook-house for the Battery of Royal Artillery at Steamer Point.

19. **Dharwar.**—Half of the hospital has been finished, the other half requires to be roofed in and plastered. The servants' quarters, and cook-room for the hospital, are nearly completed. The quarters for the medical staff and servants, the latrines, guard-room, magazine, compound wall round the magazine, and school-room, are well advanced. The out-door lavatory and sentry-boxes have been completed. The infectious wards and dead-house have been raised up to plinth. The armourers' shop has been commenced. Estimated amount, Rs. 41,542; expenditure, Rs. 26,569.

Buildings for new Native Infantry Lines.

20. The whole of the new roads in these lines have been formed, and road-side trees have been planted, at a cost of Rs. 4,947.

Roads, Native Infantry Lines.

21. The tank embankment has been raised and levelled, a new waste weir built, and a sluice made to supply the fields in rear with water, at an outlay of Rs. 4,552.

Raising bund tank for Native Infantry Lines.

22. The well was deepened about 80 feet; it will be completed before the monsoon. The well has been found to work satisfactorily. Expended Rs. 1,579.

Well near Native Infantry Lines, Left flank bazaar.

23. **Belgaum.**—The re-building of portions of the scarp wall of the Fort has been in progress. The wall on the south-east has been built up 3 feet in height for a length of 10 feet, and the other portion on the south 4 feet in height and 45 feet in length. Estimated amount, Rs. 9,716; expenditure, Rs. 2,989.

Fort.

24. A plunge bath and well for the Artillery Barracks are in progress. Estimate, Rs. 8,910; expenditure, Rs. 6,484.

Artillery Barracks.

25. The following additions to the quarter-guard have been completed, viz :—the old quarter-guard has been enlarged by adding a room to the east end, with verandah on 3 sides of the same; the guard-room has also been prolonged on the southern end, so as to make one room 67½ feet by 18 feet; 4 new cells, one wash-house and one privy have also been constructed. Cost Rs. 16,794.

European Infantry Barracks.

26. The closing of the outer arches of the verandah and providing fixed gymnastic apparatus for the gymnasium for the European Infantry Barracks has been completed at an outlay of Rs. 4,696.

Gymnasium.

27. **Shola'pur.**—This work was stopped in December 1875, in consequence of arrangements having been made to run troop trains through between Ghooty and Shahabad. In order to preserve the buildings, their roofs have been completed, and the doorways and window spaces blocked up. Estimated amount, Rs. 5,991; expenditure, Rs. 4,683.

Rest-house at Sholápur.

28. **Poona District.**—The barrack was all but completed before the close of the year 1874-75; the expenditure in 1875-76 was on account of extra work, closing verandahs, which was afterwards ordered. Amount of estimate, Rs. 23,094; expenditure, Rs. 22,839.

Single-storied barrack at Purandhar.

29. A half company cook-house, in accordance with the standard plan, has been built at Purandhar. Walls, coursed rubble stone and lime, pointed; floors, cut stone pavement; roof, cut teak; supports, round teak rafters, and double tiled over deal boarding. Cost Rs. 3,307.

Cook-room for the barrack at Purandhar.

30. A canteen with accommodation as laid down for two batteries of Artillery has been half completed. Walls, coursed rubble masonry; floors, cut stone pavement; roof, cut teak throughout, and double tiled over deal boarding. Amount of estimate, Rs. 11,924; expenditure, Rs. 4,897.

Canteen at Purandhar.

31. A school-house, with a verandah 10 feet wide all round, has been built, affording accommodation for 66 men. Cost Rs. 6,632.

School-house at Purandhar.

32. Permanent quarters for twelve hospital servants at Purandhar have been built. Twelve rooms, each 12 feet by 10 feet and 8 feet to eaves placed back to back. Cost, Rs. 3,411.

Quarters for the 2nd class hospital servants at Purandhar.

33. **Poona and Kirkee.**—This work is proceeding under contract. The following buildings have been completed, viz :—Enclosure wall, No. 2 block of cells, work-shed, chapel, hospital and out-buildings, apothecary's quarters and out-houses, warders' quarters and out-houses, cook-house, lavatory, latrines and urinaries; and of No. 1 block of cells, foundation plinth and superstructure, also the superstructure of the guard-house; the remaining sub-heads are in progress. The whole work will probably be completed by July 1876. Amount of estimate, Rs. 2,06,897; expenditure, Rs. 1,52,004.

Military prison at Poona.

34. Four blocks of married quarters have been paved with cut stone on a concrete bed at a cost of Rs. 19,527. The total area of pavement laid was 52,340 square feet.

Paving the four ranges of patcherries at Ghorpuri.

35. The buildings for the Sappers at Kirkee were well advanced at the close of the official year 1874-75, and the expenditure incurred during the year 1875-76 was on account of finishing the undermentioned buildings, all according to standard plans :—Sergeant Major's quarters, School-master and Quarter master sergeant's quarters (under one roof,) Conductors' quarters, blocks of married quarters affording the usual accommodation for 12 non-commissioned officers of Sappers. Estimated amount, Rs. 1,13,396; expenditure, Rs. 1,11,327.

Buildings for the Sappers at Kirkee.

36. The thatch roof having been destroyed by fire has been replaced by a double-tiled roof, supporting timbers of cut teak. The walls, where defective, were removed to springing of arches, and rebuilt with brick and lime. Cost Rs. 9,563.

Double-tiled roof on the hospital of the 1st Grenadier Regiment Native Infantry, Poona.

37. **Ahmednagar.**—One block of buildings, containing two harness-rooms and a stores room, has been erected in the Artillery lines in rear of the patcherries, and facing west; each harness-room contains rack-complete for 55 sets of harness. There are verandahs front and rear, 10 feet in the clear. The walls are of stone and lime, and the roof of cut teak, double-tiled. Estimated cost, Rs. 13,011; expenditure, Rs. 10,687.

Harness-rooms for the Royal Artillery.

38. **Northern Konkan.**—The construction of new pendalls for one-half the wing of the Native Infantry Regiment at Tanna has been partly carried out. Estimated amount, Rs. 28,912; expenditure, Rs. 19,999.

Detachment Lines for Native Infantry at Tanna.

39. **Na'sik.**—This building consists of two rooms, with verandahs in front and rear. A portion of the rear verandah is enclosed to form a bath-room. The out-houses consist of a cook-room with a verandah and a latrine. Cost Rs. 4,937.

Hospital Serjeants' Quarters at Deolali.

40. This building consists of 4 rooms, namely, ward, surgery, rooms for matron and hospital assistant, with a verandah all round, all under one roof. The out-houses consist of one bath-room with a verandah in front, a cook-room and a privy. The roof remains to be completed. Estimate, Rs. 3,467; outlay, Rs. 3,394.

Temporary lock hospital at Camp at Deolali.

41. **Surat and Broach.**—The lines consist of 16 pendalls arranged in two rows of 8 pendalls each, separated by an interval of 150 feet. Each pendall gives accommodation to 41 men, is 180 feet long, 16 feet wide, and the buildings are placed 50 feet apart. Two guard-rooms and four wells have been constructed. Cost Rs. 24,695.

Temporary Lines for a Regiment of Native Infantry at Baroda.

42. The following works have been constructed for the accommodation of European and Native Troops at Baroda, viz :—

Works in connection with the housing of the European Troops at Baroda.

New Works.—Nine temporary urinals, two latrines, two wash-houses, seven chupper sentry-boxes, one latrine, erecting 25 chupper roofs over the tents of European soldiers, providing partitions to the family pendalls in the new Native Infantry Lines at Baroda, lengthening the new pendalls for married men of Native Infantry, erecting store-room in connection with the new Native Infantry pendalls, building a workshop in connection with temporary lines of Native Infantry, erecting grass sheds for sheltering camp followers of the Royal Artillery and of the Native Cavalry, constructing a cook-house for the use of European Troops at Baroda, providing an additional layer of tiles to barrack No. 109 at Baroda, making semi-permanent stable for ½ Battery Royal Artillery for 56 horses, and constructing additional out-houses for the hospital of 22nd Regiment Native Infantry at Baroda.

Additions and Alterations.—Additions and alterations to Royal Artillery quarter-guard at Baroda, additions and alterations to barrack No. 15 at Baroda, enclosing a portion of the gun-shed to use it as a store-room, additions and alterations to the guard-room of European Regiment, additions and alterations to barrack store-room, and emergent repairs to the portion of the 22nd Regiment Native Infantry Lines at Baroda. The whole have been completed at a cost of Rs. 21,497.

Artillery Barracks.

43. **Ahmedabad.**—These barracks are according to the standard plan, for half a battery (44 men), modified by placing the sergeants' rooms on the flanks, instead of centre, which is occupied by a day-room 46 feet by 24 feet. The plinths are 5 feet high (in place of 3 feet) as suggested by the General Commanding. Two barracks have been taken in hand, and the superstructure raised 8 feet. Doors and windows, wood-work of roof, have been prepared, and materials for floors, roof, &c., collected. Foundations of out-houses have been put in. The construction is of burnt brick and lime, the lower footing of foundations being concrete. Estimated amount, Rs. 3,19,729; expenditure, Rs. 90,000.

Infantry Barracks.

44. One half company barrack for 44 men has been commenced and foundations nearly completed. A large quantity of wood-work has been prepared and materials collected. The plan is the same as that for the Royal Artillery barrack. Estimated amount, Rs. 1,58,065; expenditure, Rs. 30,000.

Quarters for Schoolmaster and Schoolmistress.

45. These quarters are according to the standard plan for staff sergeant Class A. The foundations have been put in, wood-work prepared, and materials collected. Estimated amount, Rs. 8,958; expenditure, Rs. 3,999.

School for British Troops.

46. This building consists of a central room for the men, with a room at each end for boys and girls respectively. The end verandahs are enclosed to form rooms for keeping books in, &c., the front and rear verandahs are open, the walls are 18 feet high on a plinth of 3 feet. The superstructure is completed, and the roofing and flooring are in progress. A latrine in connection with the above has been completed. Estimated amount, Rs. 16,673; expenditure, Rs. 12,599.

New barracks, Mount Aboo.

47. **Deesa and Aboo.**—The outlay on these barracks has amounted to Rs. 6,57,401. The work in the year consisted in the formation of a road from the barracks to the standing camp, Mount Aboo. The road is about 3,755 feet long, and 8 feet wide, with a well consolidated moorum surface, dry stone drains, and revetment walls have been provided where necessary.

Alterations to punkahs in the barracks and hospital at Deesa.

48. This project consists in supplying new punkahs to the barracks and hospital occupied by the European Infantry Regiment; they are so arranged as to provide one punkah for each pair of cots. Two hundred and ninety-one punkahs have been supplied at a cost of Rs. 4,026.

49. **Rajkot.**—Rifle stop butts and range for Native Infantry at Rajkot have been provided at a cost of Rs. 3,730.

Quarter-guard, Somerset Lines, Kurrachee.

50. **Kurrachee.**—A lock-up has been added to the Artillery guard-room, and alterations have been made to the old guard-room by turning windows into doors, and by providing roof ventilation with clerestory windows, urinal and latrine attached have been moved to leeward at a cost of Rs. 4,928.

Pendalls for the 1st and 2nd Regiments of Sind Horse.

51. **Jacobabad.**—These pendalls have been completed at an outlay of Rs. 95,559.

IV.—ORDNANCE.

Reconstruction of the siege train gun-shed in the Grand Arsenal.

52. **Bombay.**—The shed, 153 feet 9 inches by 39 feet 6 inches by 10 feet 6 inches in exterior dimensions, has been reconstructed at a cost of Rs. 4,960.

Magazine for the Native Infantry Camp.

53. **Aden.**—A magazine, T shaped in plan, with a superficial area of about 256 square feet, has been tunnelled into the hill in rear of the officers' mess. Hitherto the reserve ammunition of the regiment was kept in the arsenal, but the completion of this magazine enables it to be stored in the vicinity of the lines, and to be in immediate charge of the regiment concerned. Cost Rs. 7,171.

Six small arms ammunition magazines at Kirkee.

54. **Kirkee.**—These magazine buildings, which were almost finished in the previous year, have been completed at a cost of Rs. 16,150.

55. This range is in connection with the small arms factory and masonry platform for the 8-inch gun at Kirkee. During the year the butts, gun range, and platform, wire fencing and tramway leading from filling rooms to the platform, were completed. Estimated amount, Rs. 36,903; expenditure, Rs. 33,147.

Gun range for the proof of powder at Kirkee.

56. The press-house is constructed entirely of wood, 28 feet by 35 feet, and surrounded by a high and thick masonry wall so as to confine the effects of an explosion which may at any time occur in this part of the factory. In re-constructing the pump and press-houses damaged by the last explosion, certain defects which originally existed have been rectified, and the buildings have been completed. Estimate, Rs. 17,794; expenditure, Rs. 11,031.

Reconstructing the pump and press-houses of the Gunpowder Factory, Kirkee, recently destroyed by an explosion.

57. To meet the requirements of the Gunpowder Factory at Kirkee, a second set of retorts for the preparation of charcoal are in progress. The outlay has been Rs. 3,066, which includes the cost of certain alterations in the Retort-house to facilitate operations. Estimate, Rs. 5,814.

Second set of retorts for the Gunpowder Factory, Kirkee.

58. Improvements to add to the security of the magazine and afford greater facilities for the receipt and issue of powder and ammunition, are in progress, viz., traverses in front of doors at both ends raised 4 feet; wooden platforms 46½ feet by 15 feet laid before doors in rear; converting a guard-room into a delivery-passage and store-room; semi-permanent guard-room on the standard plan for an European as well as a Native guard; a deposit shed and platform, wooden raised pathway connecting the magazine with packing-room, deposit-shed, and delivery-passage and store-room. Estimated amount, Rs. 23,756; expenditure, Rs. 9,998.

Improvements to the Powder Magazine, Kirkee.

59. Two large traverses were commenced, each 27 feet high, base 74 feet by 54 feet, side slopes being 1 to 1 revetted with dry rubble at one end: the object is to confine the damage to one locality in the event of an explosion in the breaking-down house. Estimated amount, Rs. 3,609; expenditure, Rs. 489.

Traverses to the breaking-down house in the Gunpowder Factory, Kirkee.

60. **Ahmedabad.**—During the late heavy flood which occurred in September 1875 considerable damage was done to the buildings and out-houses in the city arsenal. The reconstruction of these buildings has been partially carried out, and their out-houses reconstructed with the old materials. Estimated amount, Rs. 6,480; expenditure, Rs. 3,489.

Deputy Commissary and Sub-Conductor's Quarters in the Arsenal.

Halla tiling floors of quarters for Warrant Officers of the Ordnance Department in Fort, Hyderabad.

61. **Hyderabad.**—This work was completed in September 1875 at a cost of Rs. 2,104.

V.—COMMISSARIAT.

Tiled verandah to the elephant and camel sheds in the Commissariat Cattle Lines, Poona.

62. **Poona.**—A single tiled verandah, 18 feet wide, open on north and east faces, closed on the south and west by a brick wall, has been constructed round the equipment shed in the Commissariat Cattle Lines at a cost of Rs. 2,184.

Slaughter-yard.

63. **Ahmednagar.**—This work, which was nearly completed in 1874-75, was put out of hand in the year; the outlay has been Rs. 27,213.

Bakery with out-houses at Deolali.

64. **Na'sik.**—This building, which has been completed, consists of two stories; the lower floor contains one office-room, three ovens, two large and one small, having space in front for tables and kneading machine. The upper floor, to which access is obtained from the lower floor by means of a stone staircase, consists of one bread-room, one biscuit-room, and one room as a "drying loft and flour store," divided off by teak plank partition. The out-houses consist of fuel-shed and a latrine, also a building for storing and washing wheat, and a room for the master baker. All the buildings (the latrine excepted) are enclosed by a rectangular compound wall. Estimated amount, Rs. 14,836; expenditure, Rs. 13,994.

Bakery and slaughter-house at Aboo.

65. **Deesa and Aboo.**—This building consists of a bakery, attendants' and chowkidars' quarters in an enclosure 120 feet by 100 feet, a slaughter-house and hanging-room in an enclosure 50 feet by 40 feet, and a sheep-shed in an enclosure 50 feet by 40 feet. The bakery is adapted for supplying bread to 300 men. These works have been completed, with the exception of sinking a well.

VII.—STAFF.

66. **Bombay.**—A compound wall 283 feet 6 inches, and a railing, 29 feet in length, on the east side, and a latrine, containing 10 seats and 4 urinals, under one roof, have been constructed. The windows in the outside walls of the main bungalow, cook-room, stable and coach house, have been fitted with iron bars and frames. All the outer venetianed shutters of the dining hall have been removed, and glazed ones substituted in their place. Also iron frames with bars to all the windows and two large doors have been fixed, with the exception of one that is used for ingress and egress. The mud floors of the two large godowns have been removed, and ¾ inch asphalte laid on 6 inch dry stone chips, and 6 inch concrete, and the stone of the small godowns removed, and their floors raised one foot above the present level and re-laid in chunam. A portion, 30 feet by 16 feet, of the dining hall floor has been boarded for the ironers to iron clothes upon. A Lodge has been constructed at the main entrance. The corridor leading from the main bungalow to the dining hall, and the open northern and western verandahs of the main bungalow have been enclosed, the former two to serve as store-rooms and the latter as an office. A window has been opened in the wall of the servants' quarters for ventilation. The open portion of the verandah of the room that was formerly used as a cook-room has been roofed in and enclosed to shelter passengers passing to and from the dining hall. One of the small rooms adjoining the old cook-house has been converted into a room for boiling dammer in, the ceiling of which is of corrugated sheet iron. The open space adjoining the above room has been roofed in with corrugated sheet iron to shelter ironers' sigries. The buildings have been white-washed, stone color washed, and painted, &c. Amount of estimate, Rs. 23,449; expenditure, 22,357.

Additions and alterations to the Clare Mount Premises in Nesbit Lane, Byculla.

67. Accommodation for 7 officers, 4 on the ground floor, and 3 above, has been provided, giving each a separate sleeping and bath-room, and setting apart the centre room as a common sitting-room, and this leaves two rooms to spare. Staircases have been provided to the bath-rooms on the upper floor for the use of the bhistees. Completed at a cost of Rs. 1,556.

Adapting the Colaba Parsonage as a Sanitarium for officers.

68. **Na'sik.**—These quarters afford accommodation for five staff serjeants, viz., 3 Class A, and 2 Class B. The quarters for Class A are so arranged that one is placed in the middle and one at each end of the building. The quarter in the centre of the building consists of a sitting-room, a bed-room under the main roof, a dressing-room and a bath-room in the rear verandah; and the end quarters consist each of a sitting-room in the main building, a bed-room, a dressing-room and bath-room in the side rear verandah; the intermediate quarters are Class B, and each consists of a sitting-room in the main building, a bed-room in the rear verandah, and a bath-room in rear of the bed-room. The building has an open verandah in front, 10 feet wide in the clear. The out-houses consist of two cook-rooms, with a verandah 5½ feet wide in front, and two latrines each provided with two seats separated from each other by an iron screen. The whole has been completed at a cost of Rs. 25,512.

Staff Sergeants' quarters at Deolali.

XI.—WATER SUPPLY.

69. **Bombay.**—As frequent complaints were made about the deficient supply of water to the barracks, patcheries, &c., at Colaba, the original pipes, which were only from ¾-inch to 1¼-inch diameter, and too small for the three or four tanks each had to supply, have been altered to 2-inch diameter with 2-inch connections with the main Vehar water pipe. Cost Rs. 2,872.

Larger pipes to Government buildings, Colaba.

70. **Aden.**—At the close of the year 1874-75, main bund No. 3 had been carried up to a height of 26 feet, and shield bund No. 1 completed. During the past year the former has been completed to the height of 30 feet, the machinery fixed, and a line of 4-inch piping carried down the face of the hill to an expense reservoir situated on the plain near the Executive Engineer's office. No rain having fallen as yet, an opportunity of judging of the success of the scheme has not been afforded. Amount of estimate, Rs. 2,39,400; expenditure, Rs. 1,26,931.

Kussaf Valley water supply project, Camp Aden.

71. The roofs over all tanks at Perim have been renewed with materials of a permanent nature, at an outlay of Rs. 6,526.

Reconstructing the roofs of the tanks at Perim.

72. The reserve tanks in both the large and small Isthmus have been connected with the Shaik Othman Tanks by means of 3-inch piping. It is now possible to fill the former at a cost of about 10 annas per 1,000 gallons, the rate formerly paid for this work having varied from Rs. 2-8 to Rs. 3-12 for the same quantity. Cost Rs. 4,633.

Connecting the reserve tanks in the Isthmus with Shaik Othman Tanks.

73. This work was completed, with the exception of the tiling of the verandahs, which could not be done, owing to the non-receipt of the tiles indented for. As a temporary measure, however, jowlees were provided, and the building handed over for occupation. Amount of estimate, Rs. 7,219; expenditure, Rs. 6,075.

Renewing the roof of the Condensing Engineer's Quarters and Engine-house, Isthmus.

74. **Shola'pur.**—The work of sinking a well in the Native Infantry Lines at Sholápur has been in progress. Estimated amount, Rs. 3,539; expenditure, Rs. 2,124.

75. **Surat and Broach.**—The well is 10 feet diameter, to be sunk to a depth of 50 feet, and two drinking troughs, each 15 feet by 4 feet by 2½ feet, to be filled by a conduit from the well, as well as a pavement 8 feet wide to surround the troughs, are under construction. Estimated amount, Rs. 3,529; expenditure, Rs. 1,823.

A well and two troughs for watering the horses of the Artillery and Cavalry at Bároda.

II.—CIVIL BUILDINGS.

I.—REVENUE.

Assistant Collector's Office.

76. **Kanara.**—This building has been completed at a cost of Rs. 4,213.

Mámlatdár's Kutcherry, Siddápur.

77. The Kutcherry, estimated to cost Rs. 19,781, was commenced in the year, and an expenditure of Rs. 4,314 has been incurred on it.

Mámlatdár's Kutcherry with Police Lines at Athni.

78. **Belgaum.**—This building was nearly completed at the close of the year. Estimated amount, Rs. 19,649; expenditure, Rs. 18,207.

Mámlatdár's Kutcherry with Police Lines at Gokák.

79. More than half of the Mámlatdár's Kutcherry has been completed. Estimated amount, Rs. 18,829; expenditure, Rs. 10,045.

Bungalow for Assistant Political Agent. (State Funds.)

80. **Kolhapur.**—This building, undertaken from funds provided by the Kolhápur State, has been completed at a cost of Rs. 13,088.

Registration Office at Satara.

81. **Satara.**—This building, consisting of 2 rooms, has been completed at a cost of Rs. 3,654. Iron record shelves of the standard pattern have been provided in each room. The roofing is of Mangalore tiles.

Mámlatdár's Kutcherry and Police Lines at Bársi.

82. **Sholapur.**—The Kutcherry has been built in accordance with the standard plan of 1874, and consists of Mámlatdár's room in the centre, with other buildings arranged in wings on the sides. A verandah, 6½ feet in width, has been provided in front of the main Kutcherry room and of the side wings. The superstructure is coursed rubble and lime, and roofing double-tiled with cut teakwood framework and cut teak rafters and deal planking for Mámlatdár's and record rooms, and round rafters and bamboo battens for the remaining buildings. Estimated amount, Rs. 17,460; expenditure, Rs. 17,432.

Pavement and iron record shelves for the Mámlatdár's Kutcherry at Juneir.

83. **Poona District.**—White ants having appeared in the floor of the record room of the new Mámlatdár's Kutcherry at Juneir, a cut stone pavement has been substituted for the moorum floor, and 12 iron record stands of the new pattern have been supplied. Cost Rs. 2,399.

Offices for the Salt Department at Oorun

84. **Northern Konkan.**—These offices consist of 4 rooms, 10 feet by 10 feet, at Shewa; 4 rooms, 10 feet by 10 feet, at Dongree; 2 each at Kolwara, Gowan, Belpara and Gotne, all with verandah in front 6 feet wide. They are scattered about and difficult to approach, except at high spring tides. Out of the above, the buildings at Shewa, Kolwara, Belpara and Gotne have been completed, and the remaining two are expected to be finished early in 1876-77. Estimated amount, Rs. 16,142; expenditure, Rs. 11,683.

Kutcherry at Máhim.

85. The Mámlatdár's Kutcherry at Kelve Máhim, the progress of which was interfered with by sickness in that locality, has been nearly completed. Estimated amount, Rs. 43,541; expenditure, Rs. 40,496.

Kutcherry at Sháhápur.

86. A new Kutcherry at Sháhápur has been commenced, and will be completed by the rains of 1876. Estimated amount, Rs. 24,527; expenditure, Rs. 16,998.

General record room in the Mámlatdár's Kutcherry at Tanna.

87. An old lock-up attached to the Kutcherry at Tanna has been altered and added to, in order to provide 2 commodious record rooms, paved and provided with teakwood record shelves at a cost of Rs. 4,881.

Mámlatdár's Kutcherry at Máhad.

88. A new Kutcherry has been commenced at Máhad very late in the season. Estimated amount, Rs. 22,287; expenditure, Rs. 999.

Mámlatdár's Kutcherry at Yeola.

89. **Nasik.**—This Kutcherry, with out-houses, is in accordance with the standard plan. The walls are of coursed rubble, stone and lime, fine jointed; roof cut teak throughout and double-tiled. The building will include the following offices, viz: Mámlatdár's office and treasury, Fouzdar's and Sub-Registrar's offices, store-room, and lock-ups for men and women separately, peons' room, and ryots'

shed. The Mámlatdár's Kutcherry and the prisoners' room have a verandah in front 6 feet wide in the clear. Estimated amount, Rs. 21,519; expenditure, Rs. 9,036.

Distillery at Násik. (Contribution).

90. The Distillery is 52 feet 10 inches by 18 feet 10 inches, with a chimney 19 feet high to carry off smoke. A room for empty hogsheads, a store-room, watchman's room, liquor store (all under one roof). The above form three sides of a square, the fourth being a wall, with a strong entrance gate. A passage in rear has also been provided, through which rubbish and refuse can be removed. The work has been completed at a cost of Rs. 5,246 from funds provided by contribution.

Mámlatdár's Kutcherry at Pachora.

91. **Khandesh.**—This building is on the standard plan. The foundations, plinth, and half of the superstructure are finished; all the wood-work purchased and being put together for the roof, doors, windows, &c. The Police Lines are finished as far as the plinth. Estimated amount, Rs. 21,925; expenditure, Rs. 10,775.

Mámlatdár's Kutcherry at Sind Khera.

92. This building also is on the standard plan. The foundations and plinth are finished, and superstructure nearly so. All the wood-work has been purchased and is being put together for the roof, doors, and windows, &c. The Police Lines have been commenced, and are completed as far as the plinth. Estimated amount, Rs. 21,311; expenditure, Rs. 12,746.

Mámlatdár's Kutcherry at Bárdoli.

93. **Surat and Broach.**—The superstructure of this Kutcherry is nearly completed. The building is on the standard plan. Estimated amount, Rs. 22,095; expenditure, Rs. 14,844.

Mahálkari's Kutcherry at Jhálod.

94. **Kaira.**—The Kutcherry is intended to afford accommodation for the Mahalkari, chief constable, and 23 foot and 4 mounted policemen, together with stables for 4 horses, sheds for peons, witnesses, &c. Estimated amount, Rs. 11,767; expenditure, Rs. 5,038.

Record room to Mámlatdár's Kutcherry at Sánand.

95. **Ahmedabad.**—The building is constructed of burnt brick and lime masonry, and has a double-tiled roof; a verandah surrounds it. Eleven iron record stands, according to the standard plan, have been provided. Estimated amount, Rs. 5,326; expenditure during the year, Rs. 4,596.

Bungalow for European Assistant Superintendent of Salt Works at Khárághora.

96. The bungalow consists of two rooms, with verandah on four sides; the rear verandah contains two rooms, one at each end, viz., bath and store-rooms. The out-houses, consisting of 3 rooms, one a cook-room and the other two for servants, with a verandah in front, have been constructed under one roof. Estimated amount, Rs. 7,987; expenditure, Rs. 7,108.

Record room to, and double-tiling the Assistant Collector of Salt Revenue's office at Khárághora.

97. The work has been completed with the exception of iron record stands, which are being made in the work-shops of the Executive Engineer Bombay Defences. A record room has been added, and its roof made in continuation of that of the existing office, at the back of which are quarters for 4 peons. A verandah has been provided on three sides of the building. Estimated amount, Rs. 5,625; expenditure, Rs. 4,313.

Constructing Mukhtyárkárate and Jail, Sehwan.

98. **Kurrachee.**—This work has been completed in the year. The two Police pendalls provide quarters for 11 men; ridge ventilation is provided. Cost Rs. 22,776.

Mukhtyárkár's Kutcherry at Thul.

99. **Jacobabad.**—This building has been constructed to about 5 feet over plinth level. A revised estimate for a beter class of roof has been sanctioned. Estimated amount, Rs. 13,920, of which Rs. 6,016 have been expended.

Residency and Political Superintendent's Office at Umarkot.

100. **Eastern Narra.**—This work has been unavoidably retarded. The buildings, however, are up to top of plinth. Estimated cost, Rs. 30,160.

II.—POST OFFICE.

New Post Office at Hubli.

101. **Dharwar.**—This building has been completed at a cost of Rs. 3,093.

Post Office at Kolhápur.

102. **Kolhapur.**—The work at this building is more than half completed. Estimate amount, Rs. 3,391; expenditure, Rs. 2,116.

III.—TELEGRAPH.

Signallers' Quarters.

103. **Bombay.**—A description of this building was given last year; the 1st floor is in progress. Estimated amount, Rs. 1,23,520; expenditure, Rs. 58,100.

Signallers' Quarters, Bhusáwal.

104. **Khandesh.**—There is a common sitting-room in centre with 4 sleeping-rooms on the sides, with bath-rooms in rear verandah. An eight feet verandah surrounds the building. Owing to the late period of the year at which this work was sanctioned, it could not be finished in the past year. The foundations, plinth, and superstructure are however ready, and the roof timbers prepared. Estimated amount, Rs. 8,568; expenditure, Rs. 7,415.

IV.—GENERAL.

Additional rooms to the Assay Office in Her Majesty's Mint.

105. **Bombay.**—The Assay Office has been extended by adding an upper story over the bullion room, and that adjoining it to the east, thus affording two extra rooms. Completed at a cost of Rs. 11,175.

Out-buildings, New Secretariat.

106. These buildings consist of a porter's lodge, a cook-room on north side of the iron gate, and a store-room, and latrines for the use of the offices, on the south side. The walls are of rubble masonry faced with Coorla stone Khandkees, to correspond with the main building. The roof, doors, and windows, are of teak-wood. The completion of the work is delayed awaiting the receipt of the latrines and urinals from England. Estimated amount, Rs. 13,265; expenditure, Rs. 9,427.

Adaptations of the Old Secretariat buildings to accommodate the Central Press.

107. The tiles of all the roofs of the buildings have been turned, and all rotten rafters and teak battens removed, and new ones substituted in their places. All the buildings have been cleaned and white and yellow washed inside, and stone washed outside. The main verandah on the east side of the building has been enclosed with teak boarding, having glazed shutters and canvas screens on the outside. All the out-buildings have been provided with cloth ceiling. The press-room has been provided with teak beams to carry the shafting of machinery. Two peons' quarters have been raised 4 feet, one for the accommodation of the engines, and the other for the foundry. Two openings have been made for communication with the other stables now used as record-room. The privy for Europeans has been supplied with 2 glazed urinals fitted with pipes and traps. Estimated amount, Rs. 20,637; expenditure, Rs. 10,449.

New Sailors' Home.

108. This building has been fully described in the report for the year 1871-72. The work has been completed, with the exception of drainage. Estimated amount, Rs. 3,68,565; expenditure, Rs. 3,37,964.

Servants' wooden staircase at Government House, Parell.

109. A room, containing a staircase for servants, five feet wide, has been constructed on the south-west corner of the building. The floor has been paved with flag stones over a bedding of concrete, and the roof has been constructed similar to that over balcony. Cost Rs. 4,017.

Cast-iron railing at the west, south and north sides of the garden of the Military Secretary's bungalow at Government House, Parell.

110. The original wooden railing on three sides of the garden has been removed, and cast-iron has been substituted. The railing consists of standards, with ornamental bays. The standards are placed 5½ feet apart from centre to centre, and fixed to the coping stones with lead packing. Two cast-iron gates, each 5¼ feet by 5¼ feet, one on the west, and the other on the north side, have been erected for communication with the garden. The work has been completed for Rs. 4,086.

Cisterns on the 2nd floor of Government House, Parell.

111. Two iron tanks, one on the terrace at the corner of the south wing, and the other on the top of the buttress at the north angle of the drawing-room, have been erected for the supply of water to 7 bath-rooms on the second floor of the south and north wings, and 3 on the first floor; 1¼-inch wrought-iron supply-pipe has been laid on from the tanks to all bath-rooms. The first tank has been connected with the Vehar main by a 2-inch cast-iron pipe, and the second by a 1½-inch wrought-iron pipe. The supply of water is regulated by ball cocks. Completed for Rs. 2,543.

Punkahs and iron water troughs at Government House, Malabar Point.

112. Two ornamental punkahs have been hung on iron rods in the dining and drawing rooms. The other rooms have been provided with ordinary punkahs with cloth fringe. Four wrought iron tanks have been provided and fixed with requisite pipes, bib and ball cocks, for the constant supply of water. Cost Rs. 2,560.

113. **Ratna'giri.**—The greater part of the superstructure of this building was done when the work came into the hands of the officers of the Public Works Department in April 1875. The building has since been completed. The Hospital supplies the following accommodation, viz :—2 large wards for 40 patients each, 1 small ward for 20 patients, 1 dispensary, quarters for a hospital assistant and one apprentice, 4 cooking sheds, and a privy. The hospital premises are surrounded by a compound wall. A well for the use of the hospital has been sunk outside the compound, and a road from the site of the buildings to join the public road has been constructed. Estimated amount, Rs. 26,939; expenditure, Rs. 26,937. Of this amount Rs. 7,206 were from private contributions, and Rs. 2,200 from local funds.

Leper Hospital at Ratnágiri. (Local Funds.)

114. **Kala'dgi.**—The foundations of this building have been excavated. Estimated amount, Rs. 8,165; expenditure, Rs. 3,235.

Dispensary at Muddibehál. (Local Funds.)

115. **Poona District.**—The model-room has been established in one of the spare rooms in the Poona District Office store-yard, and six iron stands have been made on which to place models. The architectural models principally relating to Government House, Ganesh Khind, have been cleaned and repaired. Cost Rs. 1,104.

Model room for the storage of the architectural and other models at Poona.

116. **Northern Konkan.**—At Alibág the old palace of the Ranee (a dilapidated building in the usual native style of frame work and party walls) showed signs of decay, and Rs. 4,059 have been expended upon it.

Ranee's Palace at Alibág.

117. **Na'sik.**—This building consists of 3 rooms, one to be used as dispensary and the other two as the hospital assistant's dwelling-rooms, one ward for patients and one waiting-room; a privy and a bath-room as well as a store-room, are also attached. Completed for Rs. 3,387.

Dispensary at Satána. (Local Funds).

118. This work is undertaken at the expense of the Rajah of Kapurthalla, and is half finished. Estimated amount, Rs. 18,000; expenditure, Rs. 9,432.

Kapurthalla Memorial Works. (Contribution.)

119. **Surat and Broach.**—The following additions and alterations have been made, viz., three bath-rooms and verandah to the bed-rooms on the upper story, facing the south, have been provided with staircase and gallery for sweeper; a verandah to the full length of the bed-room facing the west; a bath-room on the ground floor; a small dressing-room on the ground floor has been converted into a store and godown; two new doors have been provided in the durbar room, and punkahs provided in the Residency, and shelves, &c., in the store-room. Completed for Rs. 8,548.

Additions and alterations to the Residency at Baroda.

120. **Kaira.**—This dispensary, with accommodation for 14 resident patients, has just been commenced. Estimated amount, Rs. 6,000; expenditure, Rs. 1,509.

Dispensary at Borsád. (Local Funds).

V.—ECCLESIASTICAL.

121. **Bombay.**—The additions consist of two transepts, lengthening of the nave by 11 feet, and a baptistry. The work is completed with the exception of roof and plaster. The whole amount is from contribution. The estimate includes a porch, to cost Rs. 3,156. Amount of estimate, Rs. 19,486; expenditure, Rs. 6,442.

Additions to the Girgaum Church.

122. **Poona and Kirkee.**—The Public Works Department placed a sum of Rs. 5,382 at the disposal of the Roman Catholic Bishop, who was entrusted with the work of adapting the Presbyterian Church at Kirkee for the requirements of his congregation.

Adapting the Presbyterian Church at Kirkee for a Roman Catholic Chapel.

123. **Sukkur.**—The foundations, plinth, and 3 feet in height of walls of this building have been built, and materials have been collected. Estimated amount, Rs. 15,961; expenditure, Rs. 4,088.

New Church at Sukkur.

VI.—EDUCATIONAL.

124. **Bombay.**—This building has been fully described in the Report for the year 1872-73. Three-fourths of the first floor have been built during the year. Amount of estimate, Rs. 5,39,076; expenditure, Rs. 2,90,328.

New Elphinstone High School.

School of Art.

125. The ground floor of this building has been built up to the level of the iron girders. Estimated amount, Rs. 2,03,579; expenditure, Rs. 67,412.

University Library and Clock Tower.

126. The Library is completed, with the exception of portion of staircase, stone ballaster, rail, and re-placing broken stained glass and a few interior items, such as varnishing, &c. The fourth floor of the tower has been built during the year. Estimated amount, Rs. 5,28,093; expenditure, Rs. 4,10,250.

Fort Christian School.

127. The ground-floor and one-fifth of the first floor of this building have been finished during the year. Amount of estimate, Rs. 75,294; expenditure, Rs. 24,092.

Scottish Orphanage at Máhim.

128. This building, which is constructed on the site of the old building at Máhim, is 196 feet 3 inches in total length, 79 feet in extreme breadth, and 32 feet in height from ground level to eaves of roof. The design is Gothic, prepared by Messrs. Gostling and Morris, Architects. It consists of a ground and first floor, with open verandahs to portions in front and rear. The ground floor consists of a library and a small class room in the centre, a school-room 47 feet 3 inches by 22 feet, and a dining-room 57 feet 3 inches by 22 feet on either side of it, and the boys' dormitory and the matrons' quarters are at either end of the building. The first floor consists of the Superintendent's quarters and the boys' and girls' dormitories. The general exterior is to be faced with coursed blue stone, the dressings are to be of Coorla and Porebunder stones. The ground floor is to be paved with Porebunder slabs in places, and elsewhere with chunam concrete. The upper floors are to be teak boarded with concrete soundings. The roofs are to be tiled. The whole of the foundations have been laid during the year. Amount of estimate, Rs. 79,715; expenditure, Rs. 1,417.

School-house, Sirsi. (Local Funds.)

129. **Kanara.**—This building has been completed at a cost of Rs. 5,932.

Training College, Dharwar, Schools at Alugwady, Yergupi, Tilwally, Shelwady, Koniggery, Sudi, Lakundi, Hebsur and Mundergi (Local Funds.)

130. **Dharwar.**—The work done at the Dharwar Training College consisted of completing the masters' quarters, dining room for Lingayats, urinals, stables and servants' quarters. The schools were finished, with the exception of those at Yergupi and Hebsur, regarding the sites of which there were some doubts, and Tilwally suspended on account of severe outbreak of cholera in the town, which dispersed the labourers. The schools have been built in accordance with the standard plans of the district. Estimated amount, Rs. 26,445; expenditure, Rs. 18,180.

School at Bágewári. (Local Funds.)

131. **Kala'dgi.**—Half the plinth of this school-house has been constructed. Estimated amount, Rs. 3,231; expenditure, Rs. 1,793.

School at Ilkal. (Local Funds.)

132. This building is half completed. Estimated amount, Rs. 3,350; expenditure, Rs. 1,859.

Sunshades for the Kolhápur High School. (State Funds).

133. **Kolha'pur.**—These additions to the High School building are nearly completed. Estimated amount, Rs. 3,687; expenditure, Rs. 1,830.

(Local Funds.)

134. **Satara.**—School buildings on the new standard plan have been constructed at the following places, at the cost exhibited against each item, viz.:—

At Cháphal, for 75 boys	...	...	...	Rs. 4,066
At Bhelowdee, for 100 boys	...	...	...	„ 4,926
At Newree, for 50 boys	...	...	...	„ 2,707
At Bhosey, for 75 boys	...	...	...	„ 3,631

(Local Funds.)

135. **Shola'pur.**—School buildings on the new standard plan have been erected at the following places, at the cost shown against each item, viz.:—

At Begunpoor, for 75 boys	...	...	...	Rs. 3,282
At Bhandarkowlee, for 50 boys	...	...	...	„ 2,584
At Bhosa, for 50 boys	...	...	...	„ 1,786

136. **Poona District.**—School buildings on the new standard plan have been erected at the following places at the cost exhibited under each item viz :—

(Local Funds.)

At Indapur, for 150 boys	...	...	...	Rs. 4,788
At Pandaray, for 50 boys	...	...	...	„ 2,220
At Khandalla, for 40 boys	...	...	...	„ 1,779
At Wargam, for 50 boys	...	...	...	„ 2,194
At Talegam, for 30 girls	...	...	...	„ 1,571

137. **Poona and Kirkee.**—A range consisting of eight rooms, with a verandah in front and rear, has been built for the accommodation of resident students of the Deccan College. The rear verandah has been enclosed, so as to form eight bath-rooms. Walls, coursed rubble stone; roof, double-tiled, cut teak; floors, moorum; doors, planked; windows, glazed. Estimated amount, Rs. 6,632; expenditure, Rs. 6,300.

Additional accommodation for students at the Deccan College, Poona.

138. **Na'sik.**—The school-house consists of two end rooms and a centre room with two wings, and a small quadrangle between. Masonry of stone and lime throughout, pointed outside, and whitewashed inside; doors and windows of teak, plain planked, with iron fixtures and fastenings, floors of moorum, roof of teak, principals, hip rafters, purlins, round teak rafters, teak battens, single bamboo matting and double tiles, ridges set in chunam. Completed for Rs. 2,931.

School-house at Satána. (Local Funds.)

139. **Surat and Broach.**—This building is according to the standard plan, consisting of one room with a verandah, 6 feet wide, supported on teak posts in front. Completed for Rs. 2,420.

School-house at Bhestan. (Local Funds).

140. This building, which is similar to the one at Bhestan, has been completed for Rs. 3,246.

School-house at Karali in Broach. (Local Funds.)

141. This school-house is on the standard plan. The foundations are completed, and materials being collected. Estimated amount, Rs. 3,446; expenditure, Rs. 1,026.

School-house at Bhadelee in Bulsar. (Local Funds.)

142. **Kaira.**—This building has been completed, except a few minor items, which are in progress. The school will be ready for occupation probably in May 1876. Estimated amount, Rs. 14,352; expenditure, Rs. 14,165.

High School at Nariad.

143. The first school-house (Chikodra) has been finished, and the others will be completed in 1876-77.

School-house at Chikodra, Sársa, Ras, Soorasamal, Wásad, Khumbholuj and Shera. (Local Funds.)

Names of Schools.	Estimated Amount.	Expenditure.
Chikodra, for 75 boys...	2,122	2,000
Sársa, for 150 boys	4,625	3,862
Ras, for 100 boys	3,022	2,619
Soorasamal, for 50 boys	1,588	793
Wásad, for 50 boys	1,588	790
Khumbholuj, for 50 boys	1,588	675
Shera, for 75 boys	2,036	353

144. **Ahmedabad.**—This building has been completed and handed over to the Educational Department. The College consists of the following buildings, viz: class-rooms, dormitories for students, with out-houses, Superintendent's bungalow with out-houses, compound wall. Their dimensions have been given in last year's report. Total expenditure, Rs. 25,178.

Female Training College, Ahmedabad. (Contribution).

145. This building consists of 3 rooms with verandah in front. The masonry is of burnt brick and lime, and the roof over class rooms is double-tiled, and single-tiled over verandah. Completed for Rs. 4,625.

School-house at Burwala. (Local Funds).

146. **Kurrachee.**—This building, which was commenced in December 1874, has been completed. It was described in the report of last year. Expenditure, Rs. 45,631.

European and Indo-European School, Kurrachee.

147. Two wings, each providing 5 class-rooms, have been added to the existing school-house. The class-rooms are each 24 feet by 16 feet, and 16 feet high. Peons' quarters of 4 rooms and a latrine have been built. The masonry is of stone and lime, and the buildings are of a substantial character. The verandah in front of the original building has been widened from 6 feet to 10 feet, and woodwork in keeping with the new wings has been introduced; 2 new doors and a window have been added. The Memorial Fund Committee of the late Rao Sahib Narayen Jugurnath forwarded a contribution of Rs. 2,000 to this work, and the Municipality gave Rs. 5,000 more. Expenditure, Rs. 22,577.

Anglo-Vernacular and High School, Kurrachee.

148. This building has been completed at a cost of Rs. 7,293, of which sum Rs. 3,767 were contributed.

Guzerathi Mission School, Kurrachee.

VII.—JUDICIAL.

149. **Bombay.**—The building to accommodate these Courts is situated between the University Buildings and the Public Works Offices, and has a westerly aspect. It is 562 feet extreme length, and 187 feet extreme breadth, measured at the returning wings, the general height to eaves is 90 feet, and the central feature is 178½ feet. The design, which is by Colonel J. A. Fuller, R.E., is in early English Gothic.

New High and Small Cause Courts.

The following is the accommodation provided :—

Ground Floor.—The entrance under the principal porch on the west façade is for the *High Court*. The main staircase is on the eastern side; this is approached by a groined corridor, 10 feet wide, through the building. The Judges have two private staircases in the octagon towers on either side of the porch. On either side of the corridor, which affords access to the main staircase, there are two rooms (49 feet by 22½ feet), one to accommodate prisoners required to attend Court, and the other for printing presses; to enable barristers and solicitors to communicate with the Small Cause Courts, there are two doors in the front corridor. Two elliptical staircases on the east side give access to the Courts. The *Small Cause Courts* are situated on the ground floor, with an entrance under a porch on the eastern façade; the High and Small Cause Courts are thus separated from each other. The following are the rooms provided: 4 Courts, 44 feet by 34 feet; 4 Judges' Chambers, 23 feet by 21¾ feet; 2 waiting-rooms, 23 feet by 21¾ feet; 2 clerks' offices, 23 feet by 21¾ feet; 3 clerks' offices, 44 feet by 34 feet; 1 library, 44 feet by 34 feet; besides the usual retiring rooms.

Upper Floors.—The offices of the *High Court* occupy the upper floors; on the 1st and 3rd floors the general offices of the establishment, and on the 2nd floor the Courts, which are thus advantageously situated in regard to their own offices above and below, and also have an entire floor between them and the Small Cause Courts, by which arrangement they will be well above all noise in the latter Courts. The following is the arrangement of accommodation :—

First Floor, Original Side.—1 ecclesiastical registrar and prothonotary, 44½ feet by 34½ feet; 1 clerks ecclesiastical registrar and prothonotary, 44½ feet by 34½ feet; 1 clerks ecclesiastical registrar and prothonotary, 44½ feet by 34½ feet; 1 deputy sheriff, 23½ feet by 21⅞ feet; 1 sheriff's clerks, 23½ feet by 21⅞ feet; 1 deputy sheriff's clerks, 23½ feet by 21⅞ feet; 1 deputy sheriff's clerks, 44½ feet by 34½ feet; 1 chowkee, 23½ feet by 21⅞ feet; 1 clerk of Insolvent Debtors' Court, 23½ feet by 21⅞ feet; 1 clerks of clerk of Insolvent Debtors Court, 42½ feet by 34½ feet; 1 chief clerk and records, 23½ feet by 21⅞ feet; 1 special and common jury retiring room, 23½ feet by 21⅞ feet; 2 barristers, 44½ feet by 34½ feet; 1 pleaders, 44½ feet by 34½ feet.

Appellate Side.—1 registrar, 49½ feet by 22¾ feet; 1 English office, 49½ feet by 22¾ feet; 1 assistant registrar, 23½ feet by 21⅞.

For accommodation of general public.—One general waiting-room over porch, 31 feet by 30½ feet; besides the usual retiring rooms.

Second Floor.—1 Criminal Court, 50 feet by 60 feet; 2 Original Side Courts, 35 feet by 45 feet; 2 Appellate Side Courts, 35 feet by 45 feet; 1 consulting room, Justices', 31 feet by 30½ feet; 8 Judges' chambers, 22 feet by 24 feet; 1 library, 35 feet by 45 feet; 1 consulting room, special and common jury, 35 feet by 45 feet; 1 record room, Original Side, 35 feet by 45 feet; 1 record room, Appellate Side, 35 feet by 45 feet; besides the usual retiring rooms.

On this floor the Judges have the private use of the western corridor, the public immediately connected with cases current being admitted to the eastern corridor only; and in the monsoon, when it may be necessary to close the glass doors on the western face of the rooms, the Judges have free communication with their chambers and the other rooms on this floor by the eastern corridor.

Third Floor.—One gallery for accommodation of general public, Criminal Court; 2 galleries for accommodation of Original Courts, north wing; 2 galleries for accommodation of Ordinary Courts, Appellate Side, in the south wing.

Original Side.—One commissioner of accounts and taxing office, 46 feet by 36 feet; 1 clerks of commissioner of accounts and taxing office, 46 feet by 36 feet; 1 office keeper's residence in mezzanine floor over Court, partitioned off into rooms as required, 46 feet by 36; 1 Judges' clerks, 24¼ feet by 25 feet; 1 official assignee, 22¼ feet by 25 feet; 1 clerks of official assignee in mezzanine floor over Court, 36 feet by 46 feet; 1 clerk of the crown 22¼ feet by 25; 1 clerks of clerk of the crown, 22¼ feet by 25 feet; 1 office keeper's room, 22¼ feet by 25 feet; 1 nazir's office, 22¼ feet by 25 feet.

Appellate Side.—One chief translator, 22¼ feet by 25 feet; 2 translators, in mezzanine floor over Courts, 36 feet by 46 feet; 1 translators, 36 feet by 46 feet; 1 deputy registrar, 22¼ feet by 25 feet; 1 vernacular office, 36 feet by 46 feet; 1 Justices' tiffin room, 31 feet by 30¼ feet; 2 cook-rooms in mezzanine floors over elliptical staircases, 20 feet by 17 feet; 2 servants' rooms in mezzanine floors over servants' spiral staircases, 7½ feet by 7½ feet; besides the usual retiring rooms.

Fourth Floor.—1 record room for valuable documents over Criminal Court, 50 feet by 60 feet.

For facility of communication there are nine stone staircases from the ground floor and thirteen from 1st floor, varying from 3 feet 6 inches to 9 feet in breadth.

Construction.—The walls are of rubble and chunam faced with blue basalt, roughly dressed, and in shallow courses. The bases are of Sewree blue basalt, columns Coorla basalt, capitals Porebunder stone, arches ground floor, Coorla stone, and on upper floor of Porebunder stone; corridors, parapets are of Coorla bases, red basalt columns, Porebunder capitals and blue Sewree stone coping. The roof parapets are all in Porebunder stone perforated in quarter foils and trefoils. Spirelets of octagon towers are in Porebunder stone. Roofs covered in with Taylor's tiles over teak tongued and grooved 6-inch planking and Gothic teak trusses. The floors in Courts and corridors are paved with Minton tiles, and in other rooms consist of Italian Mosaic; the upper floors are supported by plate iron girders and timber joists with narrow planking tongued and grooved, 9 inches in length, on fillets to receive concrete sounding, thus obtaining floor and appropriate ceiling in one construction; the ceilings, however, in Court rooms are in teak of ornamental and appropriate design. Amount of estimate, Rs. 14,07,261; expenditure, Rs. 10,51,153.

Additions and alterations to the House of Correction, and adding an upper story to the Superintendent's Quarters.

150. A second story has been added, consisting of 4 large rooms and two bath-rooms, with a verandah, 5 feet wide, all round. The building is constructed of teak posts built in brick and lime masonry, and covered with double-tiled roof. The flooring is of cut teak beams, teak joists and planking. Masonry buttresses have been added to strengthen the old walls. Completed for Rs. 12,545.

Strengthening the Girgaum Police Court.

151. The additions and alterations, which were considered to be necessary to strengthen the building, have proved to be successful. Cost Rs. 3,835.

Work-shed in the House of Correction.

152. The shed is of teak posts, covered with corrugated iron. Cost Rs. 3,108.

Police Lines and Police Office.

153. **Ratnagiri.**—The two blocks of Police Lines, each containing 13 rooms and the Police Superintendent's office, have been completed. The latter contains one room for the Police Superintendent, one for his establishment, and one small bath-room in the verandah. A quadrangular well, 40 feet deep, for the use of the Police has also been sunk near the lines. The foundations and plinth of the chief constable's office have been completed. Estimated amount, Rs. 43,320; expenditure, Rs. 39,705.

Subordinate Judge's Court at Chiplun.

154. The Court-house, with one cattle-shed, 1 witness-shed, and a compound wall, has been completed. Three iron record stands have also been provided in the record-room. Cost Rs. 16,664.

Subordinate Judge's Court at Deogarh.

155. This building has just been commenced. Estimated amount, Rs. 15,221; expenditure, Rs. 2,600.

Subordinate Judge's Court at Muddebihál.

156. **Kala'dgi.**—The construction of this work has been carried up to plinth level. Estimated amount, Rs. 10,549; expenditure, Rs. 4,907.

Additions and Alterations to the Criminal Jail.

157. The foundation of the compound wall has been excavated, but the work has been stopped owing to the proposed transfer of the Head-Quarters of the Kaládgi District to Bijápur. Estimated amount, Rs. 43,687; expenditure, Rs. 657.

Subordinate Judge's Court at Karád.

158. **Sátara.**—The expenditure during the year has been almost entirely on additions and alterations to the main building which latter was completed last year. Estimated amount, Rs. 16,866; expenditure, Rs. 15,573.

Subordinate Judge's Court at Pandharpur.

159. **Shola'pur.**—The Court-house has been built in accordance with the standard plan of 1874, and consists of a court-room, private office, record-room, nazir's office and store and attached-property room. The first and last of these rooms have octagonal ends. The main building is 18 feet in height, and is surrounded on all sides by a verandah 10 feet in width, portions of which are enclosed to form two rooms for jail and guard. The superstructure is coursed rubble and lime, and the roofing double-tiled, with cut teak wood frame-work, rafters and battens. The out-buildings are a lumber-room and cattle-shed under one roof, and a latrine with two seats. Estimated amount, Rs. 17,004; expenditure, Rs. 16,973.

Central Jail at Yerrowda.

160. **Poona District.**—Considerable progress has been made towards the completion of the Yerrowda Jail. The buildings at the main entrance have been finished, and consist of superintendent's office, jailor's office, room for warder on duty and for searching prisoners, and a show-room for articles manufactured in the jail. The barracks and subsidiary buildings in circle No. 3 have been completed, and an enclosure wall 10 feet in height built. Quarters have been built outside the jail for 3 European warders, 2 chief warders, 1 assistant apothecary, and 1 steward; and a good road, 20 feet wide, embanked, metalled, and drained, has been made, affording easy access to the jail from the Fitzgerald Bridge. Amount of estimate, Rs. 9,06,407; expenditure, Rs. 7,96,796.

Tanna Jail.

161. **Northern Konkan.**—In the construction of this jail the following items have been either completed or in progress, viz: completion of guard-room and of the superintendent's quarters, with out-houses. Erection of hospital bastion gorge wall and solitary cells for 6 men, ¾ completed, condemned cells for 6 men brought up to plinth, construction of 5 drains for surface drainage nearly completed, two new latrines, two new work-sheds, removal of old buildings and getting out foundations for one quarantine block, completion of untried prisoners' ward, completion of dead, hot, and store rooms. Estimated amount, Rs. 3,93,894; expenditure, Rs. 3,13,874.

Police Lines at Bhewndy.

162. These Police Lines are on the standard plan, and will accommodate 16 men and 2 officers. Completed for Rs. 5,803.

Police Lines at Khálápur.

163. At Khálápur, Police Lines, on standard plan, for 11 men and one officer have been commenced. A lock-up for males, one for females, and a treasury are attached. Estimated amount, Rs. 5,699; expenditure, Rs. 2,997.

Police Lines at Nándgaon.

164. **Na'sik.**—These are in two blocks. One placed to the west and the other to the south of the Mámlatdár's Kutcherry. The first block consists of 4 rooms for constables and 1 for head constable. The second block of 5 rooms for constables and one for head constable. The partition walls are 1½ feet in thickness, and a verandah 6 feet wide has been provided in front of both the blocks. Completed for Rs. 4,594.

Railway Magistrate's Bungalow at Bhusáwal.

165. **Khandesh.**—The foundations, plinth, and about one-eighth of superstructure are finished. Wood-work for roof, doors, windows, &c., prepared. Foundations for servants' quarters and stables finished. Estimated amount, Rs. 14,223; expenditure, Rs. 9,867.

Subordinate Judge's Court at Bhusáwal.

166. This is on the standard plan. The foundations, plinth, and about one-fourth of superstructure were finished. Wood-work for doors and windows prepared. Estimated amount, Rs. 14,455; expenditure, Rs. 9,994.

Subsidiary Jail at Bhusáwal.

167. This building consists of two cells for Europeans and two cells for native prisoners with a guard-house. Subsidiary buildings, both for Europeans and Natives, are provided, also quarters for 18 policemen. The foundations of main building are finished, and some portion of wood-work prepared. Estimated amount, Rs. 46,615; expenditure, Rs. 7,779.

Police Lines at Jalgaon and Amalner.

168. These lines are for 11 men each. The work was carried out by the Superintendent of Police at an outlay of Rs. 3,896.

169. **Surat and Broach.**—Of these lines the plinths have been completed, and materials for roofing, &c., collected. The lines are arranged in two blocks, each containing 12 quarters. A verandah 5 feet wide extends along the weather side. Estimated amount, Rs. 6,994; expenditure, Rs. 2,448.

Police Lines at Pardi for 24 men.

170. **Kaira.**—These consist of police stations at Ghakalia and Gararoo for 8 men, and stations at Shera and Ramgerry, each for four men. The masonry work is in progress, and the lines will be completed by the rains of 1876. Estimated amount, Rs. 8,878; expenditure, Rs. 3,961.

Police Lines in Panch Mahals.

171. The construction of this court-house is in progress, and it will be ready for occupation about September 1876. Estimated amount, Rs. 5,445; expenditure, Rs. 2,953.

Subordinate Judge's Court at Godhra.

172. Four cells, each 12 feet by 12 feet, and some walling are being added. The masonry work is in progress, and the whole will be finished shortly. Estimated amount, Rs. 3,362; expenditure during the year, Rs. 1,499.

Additions and alterations to the Subordinate Jail at Godhra.

173. **Ahmedabad.**—The Foot Police Lines originally consisted of 8 pendalls with accommodation for 312 men, and 16 detached houses for native officers They were built of brick and mud masonry throughout, and were destroyed in the recent heavy flood of September 1875. The accommodation to be provided is for 20 native civil officers and 290 men, in 310 rooms in 10 pendalls and 12 detached houses for native officers. The foundations of 9 blocks or pendalls have been excavated and filled in with concrete, and the foundations and plinth of 5 blocks completed with burnt brick and lime and mud masonry. The superstructure of two blocks is completed.

Re-building the Police Lines at Ahmedabad.

Mounted Police Lines.—Some of these were also destroyed during the last heavy flood. The sanctioned estimate provides for one line of quarters and two blocks of stables, the latter to accommodate 25 horses each, and the former 4 native officers and 36 men. The space allowed is the same as in the Foot Police Lines. Estimated amount for Foot Police, Rs. 69,863; for Mounted Police, Rs. 8,568; total, Rs. 78,431; expenditure, Rs. 17,984.

174. This building is on the standard plan for Subordinate Judge's Court, the arrangements of the rooms having been, however, slightly modified. The foundations are being completed in concrete. Wood-work for doors and windows prepared, and materials collected for completing the work. Estimated amount, Rs. 15,300; expenditure, Rs. 6,253.

Subordinate Judge's Court at Dholka.

175. **Kurrachee.**—The design consists of a central court-room with Judge's chambers, munshi's office and record-room on one side, and a witnesses' waiting-room, nazir's office and property-room on the other. The Judge's quarters, consisting of a sitting-room, bed-room and bath-room, are provided in an upper story. Estimated cost, Rs. 15,871; expenditure, Rs. 6,091.

Court-house, Kotri.

176. **Shikarpur.**—The court-house at Mehar is nearly completed; it consists of 6 rooms, each 16 feet by 20 feet, and a court-house 32 feet by 20 feet in the centre, with verandahs 10 feet wide on either side. Out-houses, servants' quarters, and cattle-shed. Expenditure Rs. 6,000.

Court-house at Mehar.

III.—AGRICULTURAL.

I.—IRRIGATION WORKS.

177. **Dharwar.**—The total expenditure incurred in this division amounted to Rs. 20,284, of which Rs. 4,026 were debited to Capital, and the balance to Revenue and Contributions. Of the former, the expenditure was principally in collecting materials for the new Doni reservoir referred to in previous reports as under survey. The plans and estimates were sanctioned in October. The project consists of a masonry dam, 60 feet high, which is to be constructed across a gorge in the hills near the village of Doni on a tributary of the Tungabhadra. The length of the dam, measured along the top, is only 452 feet, and it will impound 136 millions of cubic feet of water, which will be used for the irrigation of land situated immediately below the tank, on to which it will be conveyed by an irrigation channel, 5¼ miles long, on the left bank of the nulla. The catchment area of the tank is 24 miles, and during an average year it is calculated that the tank will fill 2½ times. The area the water supply will irrigate is calculated at 1248 acres annually. The work is likely to prove of great benefit to the district, as the rain-fall is both light and uncertain. It varied from 14·52 inches in 1872 and 13·67 in 1873, to 37·72 in 1874, and the average of the last six years is only 22·32 inches. The total estimated cost of the work is Rs. 89,114. During the year Rs. 2,897 were expended in the collection of materials. Further progress of the work is delayed for want of funds.

Doni Tank.

178. The improvement of the Mavinkope Tank, which consists in raising the water level 5·18 feet, thereby increasing the storage from 11¾ to 45¾ millions of cubic feet, the estimated cost being Rs. 9,990, was commenced during the year; but the work was delayed owing to an outbreak of cholera, and the expenditure only amounted to Rs. 433. An expenditure of Rs. 885, out of an estimate for Rs. 2,785, was also incurred on the repair of this tank.

Mavinkope Tank.

179. A regulating sluice was constructed at the head of the Left Bank Madag Tank Canal, and the Right Bank Canal was excavated to its proper depth in some places where work had been incomplete. The expenditure was Rs. 696.

Madag Tank.

180. The canals were maintained at a cost of Rs. 2,705, including expenditure on plantations. The area irrigated during the year was 413 acres, on which the water-rate amounted to Rs. 1,082. The area of irrigation is steadily increasing, the largest area in any of the previous years having been 316 acres. Estimate, Rs. 1,72,836; total outlay, Rs. 1,18,849.

181. The restoration and completion of the tank at Chyankinkeri was commenced and nearly completed during the year. The estimated cost is Rs. 4,293, of which Rs. 4,007 were expended and debited to Revenue Account. It is estimated that the expenditure will be very remunerative, as certain land, which is to be drained, will realize Rs. 2,100 by the sale of the right of occupancy, in addition to an annual increase of assessment on that and other land amounting to Rs. 475.

Chyankinkeri Tank.

182. Eleven old tanks were repaired at a cost of Rs. 7,994 during the year. Of this sum Rs. 1,242 were contributed by the villagers. The expenditure was debited to Revenue Account.

Old Works.

183. Rs. 624 were expended for the Sawanur State on the tank at Siddápur and on surveys for improvements to other tanks.

184. Surveys were undertaken for the construction of a small tank at Medleri, Taluka Ránibennur, and the enlargement of the Dambal Tank investigation was continued as time permitted.

185. **Satara.**—The only work in this Collectorate on which any considerable expenditure was incurred was the Mayni Tank. Commenced in January 1869, the progress has been delayed by annual floods, by stoppage of the works in 1870, when the allotment was withdrawn, owing to the deficit, and by the scarcity of funds in other years. The tank and canal in connection with it are now virtually complete. A description of the work will be found in the report for the year 1872-73. The canal was opened in October 1874, and during the year 1875-76, an area of 348 acres were irrigated from it. Rs. 694 were expended on repairs to the work and on plantations. Estimate, Rs. 2,37,728; expenditure, 2,30,220.

Mayni Tank.

186. The expenditure incurred on this work was on distributaries and on two extra road bridges in the 25th and 27th miles. The work is complete, with the exception of some of the distributaries. During the

Krishna Canal.

year the area irrigated was 1,825 acres, of which about one half was sugar-cane. The maintenance of the work cost Rs. 4,484. Estimate, Rs. 6,17,357; expenditure, Rs. 5,99,611.

187. The Yerla, Rewari, Chikli, and Gondowli Canals were maintained at a cost of Rs. 2,404; and on the first an outlay of Rs. 462 was incurred on a short diversion. The works irrigated collectively an area of 997 acres, showing a considerable increase in the previous year, which is the more satisfactory, as the season was a remarkably good one as regards rain-fall.

Nehr Tank.

188. The plans and estimates for this work, which has been under consideration for several years, and will be found referred to in the reports of previous years, were approved by the Bombay Government and forwarded to the Government of India in January. The sanction of the Government of India has since been received to them. The tank is estimated to cost Rs. 2,21,803, and will furnish water for an area of 4,000 acres of irrigation in quadrennial rotation. Irrigation is extensively practised from the river Yerla at present, and it is the deficiency of the available supply during the dry season that alone prevents the further extension of the practice. The reservoir, besides supplementing the supply to the old pâts or village channels, led direct from the river, will give a perennial flow in the Yerla Canals already constructed by Government, which command an area of 12,000 acres. The project consists of an earthen dam, 4,400 feet long, of which the greatest height is 63 feet, with waste weir 600 feet long, and the usual outlet works, which are in this case placed at a level of 23 feet above the river bed and 24 feet below full supply, the crest of the waste weir being 13 feet below the top of the dam. The drainage area above the tank is 60 square miles, and the average rain-fall is 24 inches. The available contents of the tank amount to 243¾ million cubic feet, and during a minimum year it will fill more than 2¾ times. Irrigation being so restricted in area, as it must be in a rough country like the Deccan, the benefit to the district generally by the construction of this work will be very great, and ultimately it is anticipated that the expenditure involved will yield a direct remunerative return. The work has been sanctioned from ordinary Revenues.

Pingli Tank.

189. The plans and estimates for this work, estimated to cost Rs. 1,89,186, also received the sanction of Government for execution, as soon as funds are available, during the year. This work is situated on a tributary of the Mán River in the Mán Taluka, east of Satara, one of the driest tracts in the Deccan. The average rain-fall is 25 inches, but it is very irregular, varying from 16·42 to 38·60, and as the country is steep and the soil light, it is easy to understand that the district cannot prosper without the aid of storage works. In 1871, the rain-fall during the monsoon months was only 6¼ inches. The district has suffered severely from drought, and in 1866-67, when there was great distress from that cause, relief works had to be commenced,—among others, the Gondowli Canal, which the proposed reservoir will supply. The project consists of an earthen dam, 53 feet high above the nulla bed, impounding 195¼ millions of cubic feet of water, with usual waste weir and outlet works. The water is to be led by a short line of canal commanding 1,100 acres of land into the existing Gondowli Canal, near its head. The Gondowli Canal commands an area of 3,000 acres. The drainage area of the tank is 20 square miles. The water supply will suffice for the irrigation of an area of 2,400 acres in triennial rotation, for which the people have agreed to pay Rs. 8 per acre as water-rate. During a year of deficient rain-fall, which occurs at intervals of about 5 years, the supply might be used for the ordinary crops, and would suffice for the whole area under command. The direct return to be expected from the work during average years gives a percentage on the capital outlay, including that already incurred, of 3·15. The indirect return is represented by the value of the produce of an area of 4,000 acres of cultivation, probably about Rs. 1,20,000, saved from drought which occurs, as already stated, at intervals of about 5 years.

Surveys.

190. Preliminary surveys of tank sites in the Wásna Valley and also at Waswurweeheera on the Mán River were undertaken during the year.

A survey with plans and estimates for a project for the water supply of Satara was also undertaken and completed.

Ekruk Tank.

191. **Sholapur.**—Work on this project, which is now nearly quite complete, the tail portions of the Right Bank High Level and Left Bank Low Level Canals alone remaining to be finished, was confined to the Right Bank High Level Canal and to one road crossing on the Low Level Left Bank Canal. The outlets for irrigation and distributing channels also remain to be constructed. The tank has been full throughout the year, and the area under irrigation from the canals, though small, is steadily increasing. The works were maintained during the year at a cost of Rs. 7,357, including the cost of planting and maintaining trees along the canals and in rear of the dam. Estimate, Rs. 9,74,465; expenditure, Rs. 9,29,230.

192. An expenditure of Rs. 90 was incurred by the officer in charge of the Sholápur sub-division in the repair of the Kamatgi Tank, Kaládgi. This officer has also charge of

the Paudharpur Water Works, and of the Kurmulla Water Supply, on which the expenditure was Rs. 1,914 and Rs. 140, respectively. The latter work is estimated to cost Rs. 3,309, and is in progress. The former is complete, and the expenditure was on maintenance.

193. **Poona.**—The condition to which these works had been advanced at the end of the year is briefly as follows: The masonry dam at Kharakwásla has been raised throughout its entire length to R. L. 247·25, or 7·82 feet below its full designed height. The canal sluices and turbine sluices have been entirely completed. The waste weir has been founded for a greater part of its length, and the level of the highest part of its crest (near the dam) is 233·00 or 12 feet below designed level, and at the opposite end, where the crest meets the present surface of the ground, R. L. 231·00. During the monsoon the highest flood in the tank rose to R. L. 239·47 or 7·78 feet below the top of the dam as it stood. Calculations show that with these conditions, and taking the weakest section of the dam, the resultant of all the forces cut the base 20·63 feet from the outer edge (the whole width being 56·92), and that the pressure on the outer toe was 1331bs. per square inch. Observations were taken by means of special arrangements made beforehand with a view to ascertain whether any movement due to the elasticity of the mortar took place. These were not quite satisfactory, but will be repeated this season, and a special report will be made.

Mutha Canal.

The canal on the right bank has been completed to the 23rd mile, and water admitted as far as the 21st mile. The excavation is nearly completed as far as the 30th mile, and the masonry works are in progress. Another portion of the canal extending to the 38th mile has been laid out, and is nearly ready to be commenced.

On the Left Bank Canal, the excavation has been completed for the first nine miles, and is in progress in the 10th, 11th, and 13th miles. The masonry works are in progress.

The Poona water supply distribution works have made very considerable progress, and a few additional branches and the high service distribution pipes alone remain to be laid in order to complete this portion of the work. Two covered dispense reservoirs, one for the middle service and the other for the high service, have been completed, as well as settling reservoirs and filter beds at the two main outlets from the canal. The dispense reservoirs are pentagonal in plan, the side of the larger one being 100 feet in length. They are 12 feet in depth, and are covered by a corrugated iron roof supported on iron wire ropes. The total storage provided by these and other existing reservoirs is 4,208,000 gallons, excluding wells and private reservoirs. But, perhaps, the most interesting feature of the distribution scheme is the Poncelet wheel, which furnishes the power which pumps the water first into the settling reservoir, and subsequently, after the water has passed through the filtering beds, into the middle and high service reservoirs. This wheel is situated at a point in the canal, where there is a drop in the bed of 2·81 feet. It is of the usual form of Poncelet's undershot wheel, 16 feet in diameter and 13 feet wide. It is capable of developing 66 horse-power when worked with a discharge of 150 cubic feet a second. The wheel is of extremely light construction, and was made in Bombay from designs by Mr. Whiting, C.E., the Executive Engineer for Irrigation. The wheel was completed in March, and was set in motion on the 18th of that month in the presence of (Lord Mark Kerr) the Major General Commanding the Poona Division of the Army, and several of the residents of the station of Poona. After a description of the work and its object had been read by Mr. Whiting, C.E., the Executive Engineer, and the Chief Engineer (Colonel Fife, R.E.,) had made some remarks in commemoration of this the first occasion of the introduction of the use of water power on so large a scale in Western India, the wheel was christened in due form the "Busy Bee," and has since that occasion worked incessantly for the benefit of the community.

Some temporary outlets for irrigation on the portion of the canal already opened have been constructed.

The works remaining to complete this large project are—

(1.) The completion of the dam and waste weir.
(2.) The erection of turbines to utilize the water-power at the dam site.
(3.) The completion of the distribution arrangements in Poona.
(4.) The extension of the Right Bank Canal to the 57th mile as at present sanctioned.
(5.) The extension of the Left Bank Canal to Awund, a distance of 17 miles from the head, and a branch line for the supply of the powder works at Kirkee.
(6.) Outlets for irrigation and distributing channels to lead the water within reach of the fields to be irrigated.

During the year the water was used for irrigation on land between the head and Hadapsar (21st mile) and also for domestic purposes at Poona. For irrigation a scale of water-

rates has been fixed by Government, and the areas are measured and charged accordingly as is usual in this Presidency. For the latter, the landlords of the houses pay a rate of 5½ per cent. on the rental when the house is occupied, and 2½ per cent. when it is not. Government Offices and Departments pay at the rate of 6 or 8 annas per thousand gallons according as the water is laid on to the tenement or not. The receipts during the year, exclusive of sums due from Government Departments, amounted to Rs. 11,431. An expenditure of Rs. 13,818 was incurred on the maintenance and repair of the completed portions of the work and debited to repairs. Estimate, Rs. 46, 57, 644; expenditure, Rs. 37,66,483.

The Kasurdi Tank was maintained at a cost of Rs. 185.

194. **Ahmednagar.**—This work was maintained at a cost of Rs. 3,039, including expenditure on plantations. The rain-fall was unusually heavy, having amounted to 38·90 inches, the average of the past ten years being 18·25 only, or less than an half.

Lakh Canal.

A trifling expenditure was incurred and debited to the Capital Account. The work is entirely complete, with the exception of the masonry heads to distributing channels. Estimate, Rs. 2,57,543; expenditure, Rs, 2,46,291.

195. The completion of this work was put in hand late in the year. The work promises well as regards the utilization of water-supply available. An expenditure of Rs. 933 was incurred on the maintenance of the work. Estimated amount, Rs. 2,50,128; expenditure, Rs. 2,47,778.

Bhatodi Tank.

196. This work is complete, with the exception of three escapes and an aqueduct near the tail. The water in upper portion was used for rubi irrigation for an area of 184 acres. Estimated amount, Rs. 1,52,090; expenditure, Rs. 1,33,222.

Oojhar Canal.

An old bundara at Sâkur was repaired at a cost of Rs. 273.

197. **Na'sik.**—Complete, with the exception of the masonry heads to distributing channels. The work irrigated an area of 383 acres, and was maintained at a cost of Rs. 1,367, including expenditure on plantations. Estimated amount, Rs. 1,39,333; expenditure, Rs. 1,30,158.

Palkher Canal.

198. The Wudali and Oojhar Tambut Canals were maintained at a cost of Rs. 113 and 114 and irrigated areas of 91 and 68 acres respectively. For the former, a sum of Rs. 217 was disbursed for land compensation.

199. An expenditure of Rs. 11,255, of which Rs. 3,942 were from Contribution, was incurred on the maintenance and repair of 58 of these old works. The survey of the Chunkâpur tank on the Girna River was continued and plans and estimates were submitted. They have been returned for final revision, and will shortly be submitted for sanction. A preliminary investigation into a proposal for a storage work on a tributary of the Kâdwa, which supplies the Palkher Canal was undertaken.

Old works.

200. **Khandesh.**—General repairs and clearance of 29 bundaras on the Pânjhra river were executed at an outlay of Rs. 7,886, of which Rs. 4,970 were contributed. Four other works in other parts of the Collectorate were repaired at a cost of Rs. 590. The Jamda Canal was maintained at a cost of Rs. 3,626, including plantations and the sub-division of the dry-crop numbers into defined ones for irrigation. An outlay of Rs. 1,760 for land compensation for this work was also incurred. The Canal flowed without interruption throughout the year, except for a few days, when it was closed for repairs after due notice had been given.

201. The completion of these works was undertaken during the year, and it is anticipated that before the monsoon they will be entirely completed, with the exception of the pavements to waste weir crests, which are to be omitted for the present. The tank was used to supplement the river's supply from 24th April to 31st May. Estimated amount, Rs. 2,53,086; expenditure, Rs. 2,44,680.

Mukti Reservoir.

202. A trifling outlay of Rs. 85 was incurred on this work. The rain-fall was deficient, and the tank only partly filled. A catchment drain to increase the supply has been estimated for, and sanctioned, and will be executed next season. Estimated amount, Rs. 31,378; expenditure, Rs. 30,118.

Hartâla Tank.

203. With the exception of the 500 feet of central portion, the earthen dam has been completed and pitched, and the outlet works have been finished The puddle and concrete trenches in central portion have been undertaken and partly completed. The excavation of the channels to convey the water for

Mhaswa Tank.

irrigation from the tank is in progress. The work is described in the report for 1872-73, and will, it is hoped, be entirely completed during 1876-77. Estimated amount, Rs. 99,836 ; outlay Rs. 38,691.

Surveys.

204. The investigation of a project for a tank at Dhywell on the Kan river was undertaken with a view to the extension of irrigation on the bundaras on the Upper Pánjhra. The Talwára and Chowpalla Tank schemes are in abeyance for want of funds.

Tapti Canal.

205. **Surat.**—No further progress was made with this work, the orders of the Government of India not having been received.

206. The Agar Khári protective works, sanctioned at an estimated cost of Rs. 6,706, were completed, the outlay during the year having been Rs. 3,851, and the total outlay Rs. 5,494. The works stood the test of the past monsoon well.

Wargroj protective works.

207. These works, estimated to cost Rs. 41,102, were sanctioned in October 1875. Work was commenced in January, and fair progress made during the year. The outlay was Rs. 9,518.

The works consist of embankments with the necessary escapes, their object being to—

(1.) Prevent further deterioration of existing valuable lands from the encroachment of the sea.

(2.) To convert the beds of nullahs into valuable lands by warping them up with silt deposit.

(3.) To improve the water in the wells which has now become quite unfit for agricultural purposes.

The establishment employed in the Tapti Office were also engaged in surveys for a drainage scheme in the Kadi Parganah, north of Ahmedabad, for His Highness the Gaekwar, and in the survey of a scheme for the water-supply of Dholléra, besides surveys for repairs to tanks in Surat.

Háthmati Canal.

208. **Ahmedabad.**—The extraordinary flood of September 1875, which did such serious damage to the town of Ahmedabad, and bridges on the Sábarmati River, also injured the head works of this canal, which necessitated the closure of the canal for a month. The injury has since been repaired. Works of distribution are in progress, and irrigation is being actively carried on. Estimate, Rs. 3,84,705 ; expenditure, Rs. 3,30,867.

Khári Sluices.

209. The construction of a regulator at Pingluj to divide the water equally between the Khári and Kharola, and the straightening and improving the channel of the Khári below the bifurcation, were carried out during the year. Proposals for further improvements are under consideration. Estimated amount, Rs. 20,900 ; expenditure, Rs. 15,604.

Surveys.

210. The investigation of the proposed Bokh Reservoir Khári Cut, and Khárágora Tank schemes, is in progress.

Gauging.

211. Collection of statistics of discharge of rivers and rain-fall in various districts continued.

West Bund on Mánote Road to Duriwah.

212. **Jacobabad.**—This completes a continuous bund of about 15 miles in circumference all round Jacobabad. Estimated amount, Rs. 7,520 ; total expenditure, Rs. 7,170.

Closing up four Canals.

213. This work consisted in conveying the water of four Canals into the Jamiliwah, which opens into a large tank. Estimated amount, Rs. 5,323 ; expenditure, Rs. 5,253.

Begári Canal.

214. **Begári Division.**—The year's work consisted in commencing the head regulator at Arikepul and regulators at the mouths of the Mirzawah and Nurwáh, also the widening of the first 7 miles, with banks where required, as far as the 37th mile.

Sind Canal.

215. The Sind Canal was re-levelled and mile-stones and bench-marks provided. A new mouth and sluice to the Kaisawah, a branch of the Sind Canal, was commenced. This was a contribution work. A tail sluice was constructed on the Chota Begári to control the supply better.

Regulating Bridges for the Chittiwah.

216. A regulating bridge was begun for the Chittiwah in the Ruffan Bund, in place of a sluice washed away. The work has been stopped by the river encroachment after the materials had been collected. The expenditure was to be borne half by the Imperial and half by the Local Funds. Estimated amount, Rs. 6,143; expenditure, Rs. 1,000.

Maintenance of Begári Canal and Branches.

217. Banks were repaired and bed cleared where necessary. Four chowkies repaired. Estimated amount, Rs. 51,951; expenditure, Rs. 52,296.

Desert Canal.

218. **Desert Canal.**—The canal was widened at mouth from 30 feet to 40 feet and proportionally through the length now open. The canal was also extended from the 36th to the 52½ miles across the Desert, the most difficult part of the whole undertaking. The rates were moderate, and the plan adopted of loosening the earth with ploughs, and afterwards removing it with "keems."

The stop-gate bridge near Drukhan is making slow progress, owing to the difficulty of getting good bricks in sufficient quantity. The archway is now in hand, however. The spoil banks of the old canal have been moved back for the 6 miles near the tail, thus completing that work.

A first and second class chowky have been built with out-houses and store-yard. The repairs have been slight. The plan of allowing the flood water of the country to pass across the canal with as little obstruction as possible has proved a great success. In many cases a tendency is observed of self-repair by silting up what had been cut away by previous floods. The groynes at the Rupp Dhora have also been found successful. The silting at the mouth of the canal has been got over this year by cutting away the upstream bank at the mouth to a low flat slope for about 200 feet, and placing the spoil on the down stream or south bank, thus obviating all check to the current of the Indus water. No change occurred in the canal mouth this year during the inundation. Estimated amount, Rs. 1,00,000; expenditure, Rs. 1,00,239.

Sukkur Canal.—Scouring Channel.

219. **Sukkur Canal Division.**—This work was resumed in November 1874, and completed, with the exception of a portion, 150 feet in length, in which there is 18,318 cubic feet rock excavation, and for this work the necessary pumping apparatus was not forthcoming.

The usual dam to a length of 350 feet was constructed, silt deposit removed, and rock excavation, averaging 2 feet in depth between dams, carried out. The total expenditure on the above account has been Rs. 11,882, against an allotment of Rs. 12,213. Foot bridge for accommodation of inhabitants of old Sukkur: foundations on rock; spans three 20 and two 10-feet openings; height of piers 23 feet above canal bed; girders, teak for larger, and babool wood for smaller openings, 2-inch planking, and finished with hand-rails. Turnstiles provided to prevent cattle crossing the bridge. Expenditure, Rs. 2,766.

Bridge at 9th mile.

Materials for a bridge estimated to cost Rs. 14,478, prepared, and some wells sunk for foundations. Expenditure, Rs. 5,050.

Bridge at 15th mile.

Materials being collected for a bridge estimated to cost Rs. 17,592, on the road from the Indus Valley State Railway, near Rook, to Shikarpur. Expenditure, Rs. 2,725.

Bridge at 22nd mile.

Materials being collected, and well foundations in progress for a bridge estimated to cost Rs. 14,478. Expenditure, Rs. 4,790.

Original excavations.

Work under this head resumed below 4th mile bridge in the hot weather, and completed as far as possible before opening of the canal. Expenditure, Rs. 8,813.

Spoil banks (strengthening).

The left spoil bank (Maksudo) Sukkur Canal has been strengthened for a distance of 2 miles opposite Arji Bhootyar village, and the work proved successful in preventing breaches during last inundation, which were a source of annoyance and loss on this portion of the canal in former years. Expenditure, Rs. 7,543.

Planting Trees.

A number of trees have been planted, chiefly talee or black wood, and are doing well. Expenditure, Rs. 1,982.

Regulator Faiz Durya.

This work, which was described in last report, has been completed, and water, which formerly ran to waste, can now be economised. Expenditure, Rs. 3,269.

General Abstract for Sukkur Canal.—Estimated amount, Rs. 10,68,921; expenditure, Rs. 9,34,755.

220. **Gha'r Division.**—This work has been completed. Its object was to shut out the river floods which swept across the Gillespie Wah, and thereby save a very large extent of valuable land, and also to regulate the gradient of the canal and construct proper embankment and masonry heads to all kurriahs taking off from the canal and bund. Estimated amount, Rs. 35,857; expenditure, Rs. 30,452.

Extension of Abad Bund and Improvements to Gillespie Wah.

221. This work has been completed and consisted of cutting and embanking new mouth; clearance and repairs to embankments of old canal; clearance and repairs to escape channel; construction of head and cross sluices and other minor works, including the converting of an old bridge on the Nasirabad and Lárkhána road into a stop sluice. Estimated amount, Rs. 26,426; expenditure, 21,289.

Cutting a new mouth to, and improving the Mundéwáh.

222. An embankment 17,000 feet in length has been constructed on the left bank above the Sehwan boundary, and additions and alterations made to the sluices on both banks. The Masúwáh has been re-opened and enlarged, to serve as an escape to the Narra. Estimated amount, Rs. 29,120; expenditure, Rs. 18,753.

Restoration of embankments and sluices, Western Narra.

223. This work has been undertaken to increase the supply in the tail of the canal. The improvements consist of a stop sluice with Rajbuhas for cultivation on the last 4 miles, and the excavation of the Main Canal, but very little has been done to the latter, owing to the larger quantity of water flowing in it. Estimated amount, Rs. 21,143; expenditure Rs. 4,908.

Improvements in the tail of the Nasirwáh.

224. The construction of two sluices, one at 8th mile and the other at 12½ miles, has been completed. Estimated amount, Rs. 2,757; expenditure, Rs. 2,508.

Edenwáh Sluices.

225. **Eastern Narra.**—Commenced in February 1872, and completed May 1876, at a cost of Rs. 12,650.

Constructing weir across Adwhana Saug.

226. Materials collected during the previous year; work completed by the end of March 1876, for Rs. 7,677.

Weir across Narra below head of Owwin.

227. This work, owing to water in the canal, could not be commenced till February 1876. Estimated amount, Rs. 8,330; expenditure, Rs. 7,216.

Constructing Regulating Bridge at head of Dinwáh.

228. **Rhori Canal Division.**—The expenditure on irrigational works in this Division has chiefly been for maintenance in the form of the usual silt clearance from Canal beds. The River Indus during the inundation of 1875, did not erode or otherwise effect the banks between Rhori and Hyderabad, and consequently there has been no unusual outlay in any of the Canal heads.

229. **Fulaili Division.**—A sluice at the mouth of the Gaza, comprising four spans of 10 feet, and one of 15 feet, has been completed for Rs. 11,351.

230. The object of this work is the removal of a very abrupt bend in the Guni at the village of Talhar by means of diversion cut, about 800 feet long, 100 feet wide, with side slopes of 1 to 1. The cut to be provided with 4 wheel wells of pucca masonry, and a portion of the side slopes to be pitched with stone. The earth-work was completed in 1874-75. The stone pitching has since been completed, and the wheel wells have been raised to an average height of 10 feet. Estimated amount, Rs. 6,646; expenditure, Rs. 4,996.

Improvements to Guni at Talhar.

231. A canal chowkey at Nindosher has been very nearly completed. Estimated amount, Rs. 4,719; expenditure, Rs. 3,780.

232. A canal chowkey at Kharewah has been very nearly completed. Estimated amount, Rs. 4,719; expenditure, Rs. 3,158.

233. Twelve sluices on kurriahs opening from the Guni and its branches have been constructed. The owners of the kurriahs contributed Rs. 1,385 of the cost. Estimated amount, Rs. 2,648; expenditure, Rs. 1,891.

234. **Kurrachee Collectorate Canals Division.**—Several works under this head have been undertaken. A road bridge, one span of 26 feet, on Bhan and Dadu Road was completed—also the Nurwáh Head Regulator. The Regulator across the Western Narra at Sau Meeani was nearly completed on 31st March, and will be finished, with the exception of a few details, by the 1st May 1876, so that water may be admitted into the Western Narra. It was found impossible to proceed with the Tail Regulator of the Nurwáh, as no suitable foundation could be obtained at a reasonable depth, and much water was met with. The earthwork connected with widening the Nurwáh was well advanced by 31st March, but cannot be completed for want of labour before the inundation season. Estimated amount, Rs. 56,796; expenditure, Rs. 25,853.

Utilising surplus water of the Western Narra.

Bund north of Buggaur.

235. Completed, for Rs. 2,595.

236. From April to August the dredge was at Sehwan undergoing repairs, and waiting for the river to rise. On the 5th August the dredge was hauled up to the Manchhar end and worked there, widening the Arul until the 4th of October, after which date it worked at the Arul outlet by Sehwan until the 4th December, and was then laid up for repairs, there not being sufficient depth of water for dredging operations.

Manchhar Lake Drainage.

In March a new cut was commenced, to cut off a bund in the Arul. Estimated amount Rs. 56,406; expenditure, Rs. 40,400.

Improving supply to the Wáhur Sehwan Taluka.

237. This project was completed during the year 1875-76 at a cost of Rs. 5,588.

Goonganee Bund.

238. Completed for Rs 9,462.

239. **Kashmor and Begári Bund Division.**—In regard to the Kashmor Bund, it was stated in the last annual report that 38 miles had been completed. Since that time, and up to the end of May, 6 more miles were finished, but with great difficulty, owing, it was reported, to the foreign labourers leaving on account of the heat, and the local labour being absorbed by the harvest operation. Estimated amount, Rs. 6,26,954; expenditure, Rs. 5,40,696.

240. This sluice was completed during 1875-76. Piers and abutments raised to full height and arches turned over the 14 small openings of 5 feet span each and one boat passage of 17 feet span. A pavement 1½ foot thick was laid over the wells, and concrete filling and a roadway, 8 feet bread, with parapets, provided. Estimated amount, Rs. 32,276; expenditure, 32,276.

Sind Dhora Sluice.

241. Four arches turned over 5 feet spans, pavement complete, and roadway with wooden railing provided. Completed in the year 1875-76 for Rs. 6,533.

Sluice over the Nurwáh.

242. Two rooms 14 feet by 16 feet, one room 20 feet by 16 feet, and bath-room 10 feet by 16 feet, with verandah 10 feet wide on north and south sides, godown 12 feet by 10 feet, have been constructed. Estimated amount, Rs. 11,000; expenditure, Rs. 10,819.

Bungalow and Godowns at Badáni.

243. This block consists of a centre room for office 20 feet by 30 feet and three rooms on each side 14 feet by 12 feet each for the establishment. A verandah, 8 feet wide, on the south side only. There are outhouses also, consisting of cook-room, rooms for servants, and stables. Work in progress. Estimated amount, Rs. 2,830; expenditure, Rs. 1,319.

Office and quarters at Badáni.

IV.—COMMUNICATIONS.

I.—ROADS.

244. **Kanara.**—A metalled road from Konay to the new jail has been constructed at an outlay of Rs. 6,804.

Road, Haliyál to Lingunmutt.

245. This road is about 4 miles in length. The work done consists in the construction of 13 masonry drains and the spreading of moorum. Estimated amount, Rs. 27,830; expenditure, Rs. 18,884.

Haliyál and Yellápur Road. (Forest.)

246. The improvements made to this road (which is a forest road) consist of clearing trees and bamboo clumps off the line, excavating side channels, raising the surface, spreading moorum, collecting and stacking it, and repairs to temporary wooden drains. Estimated amount, Rs. 7,350; expenditure, Rs. 4,660.

Haliyál and Supa Road. (Local Funds.)

247. This is a forest road of 24 miles from Supa to the point where it joins the Haliyál and Yellápur road. The improvements to it consist in widening about four miles of a ghát near Supa. Four miles have been covered with a 9-inch layer of consolidated moorum. Estimated amount, Rs. 4,043; expenditure, Rs. 3,883.

248. **Dharwar.**—One and half miles of road have been metalled between the Warda River and Háveri in the year, and 90,515 cubic feet of metal have been stacked by the road side. Estimated amount, Rs. 6,42,783; expenditure, Rs. 88,770.

Metalling Poona and Hurryhur Road.

249. The road has been defined between Gadag and Dambal with new side ditches and catch-water drains, and moorum has been spread and rolled. Estimated amount, Rs. 1,81,156; expenditure, Rs. 9,754.

Road, Gadag to Dambal and Hesrur.

250. The masonry drains on this line have been completed, and moorum has been spread on portions between Shewali and Bahutte. Estimated amount, Rs. 41,144; expenditure, Rs. 11,596.

Haliyál and Annigeri Road viâ Dharwar and Bahutte. (Local Funds.)

251. The worst portion of this road has been metalled to its full width. Estimated amount, Rs. 3,957; expenditure, Rs. 1,000.

Metalling Palla and Badami Road near Belwatti. (Local Funds.)

252. The work done during the year consisted in completing a culvert of two spans, each 8 feet wide. Estimated amount, Rs. 24,292; expenditure, Rs. 17,744.

Road from Shiggaon to Mundargi (section between Segaum and Savanur). (Local Funds.)

253. Catch-water drains have been excavated, and the road formed for a length of about 5 miles at the Háveri end. Estimated amount, Rs. 16,040; expenditure, Rs. 1,404.

Road from Háveri to Sanger. (Local Funds.)

254. A length of one mile and three-quarters of this road has been formed, with catch-water drains, and side ditches; a portion of the earth-work has been carried out, and moorum has been collected, spread and consolidated. The progress of the work was interrupted by cholera breaking out. Estimated amount, Rs. 5,237; expenditure, Rs. 1,335.

Road from Savanur to Bankápur. (Local Funds.)

255. One mile of this road has been metalled for half the width, and part of the metal has been collected for the other half. Estimated amount, Rs. 3,564; expenditure, Rs. 1,500.

Metalling road between Dharwar and Shewali. (Local Funds.)

256. **Belgaum.**—The road surface has been cleared of stones, and the spreading and consolidation of moorum has been completed. A few of the drains are approaching completion, and others are in progress. Estimated amount, Rs. 16,317; expenditure, Rs. 12,416.

Road from Byl-Hongal to Saundatti. (Local Funds.)

257. Moorum has been spread and consolidated on this road. Some of the drains are approaching completion, and others are in progress. Estimated amount, Rs. 11,619; expenditure, Rs. 9,777.

Road from Hongal to Kittur. (Local Funds.)

258. **Ratnagiri.**—The road has been widened, and otherwise improved, by building retaining and parapet walls, reducing gradients, and improving approaches to nullah and river crossings, &c., for a length of 25 miles. The work has been nearly completed. Estimated amount, Rs. 29,438; expenditure, Rs. 28,985.

Road from Khed to Poládpur.

259. This road is 15 feet wide, and runs for a considerable distance through hilly country. It has been carried to within three-quarters of a mile of Palgad. Estimated amount, Rs. 11,635; expenditure, Rs. 11,167.

Road from Khed to Palgad. (Local Funds.)

260. A cart road from Chowke to Nerur has been half completed. Estimated amount, Rs. 6,378; expenditure, Rs. 3,533.

Road from Miraj to Mysal. (State Funds.)

261. **Kolha'pur.**—Improvements have been effected to this road at a cost of Rs. 5,184.

Portion of Arjunwar and Kurundwar Road. (State Funds.)

262. The work on that portion of this road lying between the Punchganga river and the gate at Kurundwar has been completed. Expenditure, Rs. 8,378.

4th section of Kolhápur and Amba Ghát Road. (State Funds.)

263. This work was commenced in the year, and is in progress. Estimated amount, Rs. 1,10,449; expenditure, Rs. 24,599.

Road Nipani to Kurundwar. (State Funds.)

264. The portion of the road in the Kolhápur State was commenced in the year, and is in progress. Estimated amount, Rs. 22,859; expenditure, Rs. 14,545.

Road from Inchalkaranji to Atigeri. (State Funds.)

265. The construction of this road has been completed at an outlay of Rs. 29,984.

3rd section of Kolhápur and Miraj Road. (State Funds.)

266. This road likewise has been completed in the year. Cost Rs. 28,090.

Azra and Gud Ingluz Road. (State Funds.)

267. The road from Azra to Gud Ingluz is nearly completed. Estimated amount, Rs. 68,689; expenditure, Rs. 57,675

Road from Kolhápur to Bhudhargarh. (State Funds.)

268. The work of planting trees on the 1st section of this line of road is in progress. Estimated amount, Rs. 7,915; expenditure, Rs. 4,477.

269. **Satara.**—On this line parapets have been constructed between Mahableshwar and Ambenulla, and this portion of the Ghát (a length of about 9½ miles) has been entirely completed. Below Ambenulla the road has been widened out where necessary, the drains and revetments have been completed, and all that remains to be done is some 2,100 running feet of parapet walling, and finishing up here and there, to improve the road surface and its drainage. Estimated amount, Rs. 4,46,043; expenditure, Rs. 4,45,769.

Fitzgerald Ghát Road.

270. Three miles of metalling have been completed, and metal has been collected for another mile. Estimated amount, Rs. 12,345; expenditure, Rs. 4,837.

Metalling the Ghát portion, Karád and Kumbharli Road.

271. The Ghát portion of this line, to cross the spur running out from the Quoina valley has been traced, the trial path being 8 feet wide, with a ruling gradient of 1 foot in 10 feet. This line is required only for pack bullock traffic, and will be provided with paved dips where needed. Estimated amount, Rs. 4,546; expenditure, Rs. 3,629.

Satara and Pátan Road. (Local Funds.)

272. The Shirgaum Khind trace was commenced to be widened out to a breadth of 16 feet. It is to be continued until it joins the old Poona and Satara Road near Pimpora. Estimated amount, Rs. 11,496; expenditure, Rs. 1,161.

Clearing Shirgaum Khind Road. (Local Funds.)

273. This line is 9½ miles long. A practicable cart road has been traced, and the Ghát separating the Wai and Koregaon Talukas crossed by a path 8 feet wide, with a ruling gradient of 1 foot in 20 feet. Cost Rs. 2,542.

Surveying and lining out road between Wai and Shirgaum Khind. (Local Funds.)

274. **Shola'pur.**— Three culverts, 13 slab drains, and 8 barrel drains, have been completed, and the road embankment formed for a length of six miles. Estimated amount, Rs. 1,24,452; expenditure, Rs. 29,391.

Road from Sholápur to Tákli.

275. The outlay in the year on this road consisted of a small sum in payment of compensation for land, &c. Estimated amount, Rs. 1,05,235; expenditure, Rs. 93,440.

Road from Bársi Road Station to Pandharpur. (Local Funds.)

276. **Poona District.**—The shingle bed of the Neera River affording but a rough crossing for carts during the fair season, it was proposed to utilize the low masonry piers of the old timber bridge (which was carried away by a flood in 1853) and construct a causeway by building cross walls and filling in with concrete, and paving the surface. Although this causeway would be liable to be submerged in the monsoon yet for eight months in the year it would afford a safe and easy crossing for carts using the road. The work has been carried out at a cost of Rs. 5,088, divided between the Local Funds of Poona and Satara.

Causeway across the Neera River at the site of the old Neera Bridge, Poona and Satara Road. (Local Funds.)

277. **Ahmednagar.**—This road is 50 miles long, and is intended to carry the traffic of the Kharda, Jámkhed, Karjat, and Shrigonda Talukas towards the Railway and Poona. In the Ahmednagar District it terminates at Káshti on the Dhond road, about 6 miles from Dhond. It is to be only a cleared tract with side gutters, the good material excavated from which will provide the only surface layer to the road. About 13½ miles of the line extend over black soil; 11 miles over red soil; 18 miles over barren pasture ground; 6 miles over rugged stony ground, and 1 mile over hill sides. About 20 miles from Káshti have been done in the year, but it has been impossible to follow the best line everywhere on account of the objections raised by the tenants of the fields. Amount of estimate, Rs. 10,772; expenditure, Rs. 3,924.

Road from Kharda to join the Poona road at Káshti. (Local Funds.)

278. The Ghát is about 3 miles long. About half a mile of its length is on a steep hill with occasional patches of rock out-cropping. In other parts the cutting is easier. When finished, a ruling gradient of 1 foot in 20 feet will be obtained for the road. The object of making this Ghát is to connect the Ankola Taluka of Ahmednagar with the Railway Station at Egutpura and Ghote. Estimated amount Rs. 8,053; expenditure, Rs. 2,965.

Ghát road from Bari in the Ankola Taluka to near Washile in the Egutpura Taluka of Násik. (Local Funds.)

279. **Northern Konkan.**—The masonry work on this line has been in progress, and all the large bridges have been completed, and nearly all the drains also. There remain about 2 miles near Campuli junction to be finished. Estimated amount, Rs. 59,986; expenditure, Rs. 1,00,155.

Road from Gagoda Khind to Campuli.

280. Metalling the road from Dhurumtur to Gagoda Khind has been completed. Estimated amount, Rs. 44,803; expenditure, Rs. 41,330.

Road from Dhurumtur to Gagoda Khind.

281. The road (3¼ miles) has been partly made, and provided with a few drains. The moorum surface and consolidation will be effected in the rains of 1876. Estimated amount, Rs. 4,925; expenditure, Rs. 3,373.

Road from Wewjee to Umbargám. (Local Funds.)

282. **Na'sik.**—This road has progressed so far that it is possible to drive from Násik to Dindori in fair weather, and for half the distance in any weather. Twenty-six drains and one causeway have been built; the latter is paved with asphalte, which has answered well, but is much more costly than stone paving, and not nearly so durable. Estimated amount, Rs. 55,339; expenditure, Rs. 34,052.

Násik, Dindori, and Kalwan road, 1st section. (Local Funds.)

283. Three causeways, over almost impassable streams, and several culverts, have been constructed, so that for the first 5 miles the road is in very fair order. Estimated amount, Rs. 82,569; expenditure, Rs. 5,377.

Násik, Dindori, and Kalwan Road, 2nd section. (Local Funds.)

284. A quagmire, 2 miles in length, has been made passable, and 6 drains and 1 causeway have been built, and banking to the extent of 2½ miles carried out. Estimated amount, Rs. 72,440; expenditure, Rs. 13,293.

Yeola and Niphád Road. (Local Funds.)

285. The earthen embankment of the road was carried out by the Local Funds Department to the full length of this section. Three awkward nullas occur for which the Public Works Department has designed bridges which are in progress. Estimated amount, Rs 7,784; expenditure, Rs. 5,699.

Bhawarbari and Vinchur Road, 2nd section. From Lásalgaon to Vinchur. (Local Funds.)

286. Metal has been prepared and stacked, and will be spread as soon as the rain falls. Estimated amount, Rs. 6,947; expenditure, Rs. 1,600.

Metalling the first four miles of the Násik and Trimbak Road. (Local Funds.)

287. A neat riding path has been made to the steps, which have been repaired and trimmed, a stout railing being provided where required; and on the Khandesh side the road has been repaired, and a retaining wall built where the bank had given way. Estimated amount, Rs. 3,456; expenditure, Rs. 3,230.

Improving the Suptshring Hill Roads. (Contribution.)

288. **Khandesh.**—The metalling has been completed. Great difficulty was experienced in obtaining labour, as the Ghát is unhealthy up to February; and work-people do not like remaining there during the rains. The road is 2 miles and 3,840 feet long by 19 feet broad, and a covering, 9 inches thick, of metal has been laid on its surface. Cost Rs. 19,910.

Metalling the Kondaibaree Ghát on the Dhulia and Surat Road.

289. The metal on these roads was consolidated during the rains. Estimated amount, Rs. 3,913; expenditure, Rs. 3,227.

Roads to connect all Government Buildings at Bhusáwal.

290. The operations on the road have been somewhat retarded by outbreaks of cholera, which necessitated the removal of the work-people from the neighbourhood; several bridges and drains have been completed, and a good deal of moorum spread on the surface. Estimated amount, Rs. 2,39,632; expenditure, Rs. 1,39,306.

Road from Dhulia to Pimpalner. (Local Funds.)

291. About 6 miles of earthen bank have been thrown up, and 2 miles of moorum carried out. A few culverts have been commenced. Estimated amount, Rs. 68,977; expenditure, Rs. 15,059.

Road from Songir to Nandurbár up to Chimtana (11 miles). (Local Funds.)

292. This work has been finished, with the exception of consolidating the moorum, which cannot be done until the rains of 1876. The road extends from Bhusáwal to the banks of the Tapti (where there is a temporary bridge) on the road to Yáwal and Sauda. It is 6,535 running feet in length and 20 feet broad, with an average coating of 12 inches of moorum. There is one culvert 2 feet by 3 feet. Estimated amount, Rs. 2,568; expenditure, Rs. 2,144.

Road from Bhusáwal to Tapti. (Local Funds.)

293. **Surat and Broach.**—An additional layer of 3 inches of metal has been spread over the first 3¼ miles, and the surface of the road along its entire length, which is 8·33 miles, has been well rolled and consolidated. Cost Rs. 9,481, of which Rs. 6,315 have been provided from Local Funds.

Metalling the Kim and Tarkesar Road.

294. A layer of metal 4 inches in thickness has been spread on the portion of the road lying in Gaekwari Territory, 3 miles 2,160 feet, and with the exception of consolidation this portion has been completed. In the portion in British Territory, 2 miles 2,387 feet, the earthwork and drains are nearly completed, and the collection of metal well advanced. Estimated amount, Rs. 50,955; expenditure, Rs. 43,824.

Chikhli and Bilimora Road.

295. The road has been partly metalled, and with the exception of the Amla Khari, the whole of the water-courses are bridged and drained. Estimated amount, Rs. 2,13,826; expenditure, Rs. 1,86,630.

Road from Ankleswar to Hánsot. (Local Funds.)

296. The earthwork washed away during the rains of 1875 has been restored, and several culverts and drains have been completed in the year; others are in progress. Estimated amount, Rs. 2,70,596; expenditure, Rs. 2,57,674.

Broach and A'mod Road including bridges and culverts. (Local Funds.)

297. The collection of materials is in progress. Estimated amount, Rs. 1,57,029; expenditure, Rs. 11,231.

Sand surface to the Broach and A'mod Road. (Local Funds.)

298. The road has been cleared and widened, and three barrel drains have been constructed. Cost Rs. 2,706.

Road and barrel drains from Aítagaum to Mutwar. (Local Funds.)

299. **Kaira.**—This road is the final link to connect Páli (the terminus of Branch Railway lately sanctioned) with Godhra. A fair-weather road, 16 miles in length, with bridges and culverts, already exists, and a project for metalling has now been sanctioned, and the work commenced. Estimated amount, Rs. 79,464; expenditure, Rs. 4,936.

Metalling the road from Godhra to Páli.

300. The project is for works to complete, as a metalled road, the section between Simlaj and Páli. The roads are nearly complete, and it is not proposed to do anything more, as they are to be taken over for the lately sanctioned Páli extension of the Dákor Branch Railway.

Road from Thásra to Páli and from Simlaj to Thásra. (Local Funds).

Names.	Estimated Amount.	Total Expenditure.
	Rs.	Rs.
Improving the road from Thásra to Páli, and building culverts, &c.	41,219	36,394
Do. do. from Simlaj to Thásra	32,072	1,807
Completing, as a metalled road, the section of the A'nand and Godhra line between Thásra and Páli	31,672	31,134
Do. do. between Simlaj and Thásra ...	18,064	12,873

301. This is the final section of the line from the Dákor Railway Terminus to Dohad, and it is very important to the Kaira Districts, the Panch Máhals, and also to the neighbouring Native States. The line is 43 miles in length, of which 23 are in British and 20 in Bária Territory. The cost of the latter is met from special funds and of the former from Provincial and Local allotments. This work is now practically complete, though a small sum remains to be expended in finishing up some minor items. The last section of about 13 miles of stone metalling was completed and opened in the year, and the whole length is now finished and made use of by a very heavy traffic. There are two bridges, one masonry three spans 50 eet, one masonry and iron girders four spans 60 feet, ten other smaller bridges, and 67 ulverts and drains. Estimated amount, Rs. 4,81,832; expenditure, Rs. 4,75,383.

Godhra and Dohad Road. (Local Funds.)

302. It is proposed to embank and metal with kunker a cleared road between the Railway at Wásad and the town of Borsad, a distance of 11 miles. All the metal has been prepared, and the earthwork has been finished. Estimated amount, Rs. 41,325; expenditure, Rs. 27,938.

Road from Wásad to Borsad. (Local Funds.)

303. This is the first section of a road joining Kaira with Dholka, and it is proposed to treat it in the same manner as the Wásad and Borsad road (*ante*). Earthwork has been completed, and kunker collected, and the road will be finished and opened during the monsoon of 1876. Estimated amount, Rs. 15,882; expenditure, Rs. 10,893.

Road from Kaira to Wasna. (Local Funds.)

304. This is a short line (under a mile in length) to join by a stone metalled road the town of Dákor with the Rakhial Railway Station. The chief work was a bridge 3 spans 60 feet iron girders and masonry piers. The piers were on blocks sunk through water to hard foundations. This bridge has been completed, and the road is used by the traffic. The metalling will be completed shortly. Estimated amount, Rs. 50,835; expenditure, Rs. 42,354.

Road from Dákor to Rakhial. (Local Funds.)

305. The road, which is about six furlongs in length, has been finished and opened to traffic. Estimated amount, Rs. 3,219; expenditure, Rs. 3,217.

Road from A'nand to A'nand Railway Station. (Local Funds.)

306. This is a branch road about 3½ miles in length to open out communication with important villages in the Mátar and Mehmadabad Talukas of the Kaira Collectorate. The road will be metalled with kunker. The work is well advanced. Estimated amount, Rs. 21,816; expenditure, Rs. 8,899.

Road between Wasna and Naika. (Local Funds.)

307. The road is 20 miles in length, and will join the town of Kapadwanj with the Dákor Railway Station. A fair-weather road with bridges and culverts has been sanctioned, compensation for land has been paid, and most of the earthwork completed. Estimated amount, Rs. 47,618; expenditure, Rs. 13,246.

Road from Dákor to Kapadwanj. (Local Funds.)

308. This road is a Railway feeder to join Mátar, and eventually Dholka, with the Railway Station at Nariad. Only a clearance has been proposed at present, but the line will probably be improved hereafter. Estimated amount, Rs. 19,581 ; expenditure, Rs. 11,134.

Road from Nariad to Wasna Bujrag *via* Mátar, with a Branch joining the Shedhi Bridge. (Local Funds.)

309. These include a branch line to connect the chief town of the Bária State with the Godhra and Dohad road, and two other feeders are also provided for. The Bária Branch (8½ miles in length) is to be bridged and stone metalled throughout. All the earthwork and masonry works are nearly finished, and will be completed before the monsoon of 1876, and in the next season the road will be opened to traffic. The other branches, aggregating 12 miles in length, are in progress. Estimated amount, Rs. 54,124 ; expenditure, Rs. 25,929.

Roads connecting Bária, &c., with the Godhra and Dohad road. (Local Funds.)

310. This is a portion of the road (6¾ miles in length) on the line joining Kaira and Dholka. It is at present a fair-weather line, but it is proposed to metal it with kunker, and to construct embankments with culverts, drains and weirs. The embankments have been commenced. Estimated amount, Rs. 35,631 ; expenditure, Rs. 1,999.

Road from Wasna to Sábarmati River. (Local Funds.)

311. This short piece of road, about a mile in length, is to connect two roads already existing. It will be metalled and completed during the monsoon of 1876. Estimated amount, Rs. 3,609 ; expenditure Rs. 2,307.

Road between Kaira Camp and Shedhi Bridge. (Local Funds.)

312. **Ahmedabad.**—The road is to connect Sánand with the Railway Station and the old Viramgám road, which passes to the south of the town, with the main line. The whole road has been cleared, embanked, and metalled with a layer of kunker 6 inches thick, the width of road being 16 feet. The masonry work consists of a bridge of 7 arches, each 15 feet span, 5 drains, and 3 culverts. With the exception of curtain wall on the up-stream side of the bridge, the work has been completed. Estimated amount, Rs. 22,956 ; expenditure, Rs. 21,436.

Road from the town of Sánand to the Railway Station. (Local and Provincial Funds.)

313. This road leads from the Delhi Gate of the City of Ahmedabad to the burning ground on the banks of the Sábarmati River at Doodeshwar, and is 5,860 feet in length and 15 feet 3 inches in width. The roadway, with the exception of very short breaks, has been embanked all the way with side slopes 1 to 1, and its surface is formed of broken bricks, 6 inches thick, with a coating of gravel one inch thick ; 5 barrel drains have been also constructed of burnt brick and lime masonry. Cost Rs. 5,594.

Road from Delhi Gate to Doodheshwar. (Local Funds.)

314. The roads from the Bhurwadee and Golwadee gates to the Railway Station, 1,080 and 1,845 feet in length, respectively, have been repaired with earth, and their surfaces metalled in two layers, the one of broken bricks 3 inches thick, and the other of chipra (lime stones) 3 inches thick, well watered, rolled and consolidated. Cost Rs. 3,956.

Metalling the Road from Bhurwadee and Golwadee Gates to the Railway Station at Viramgám. (Local Funds.)

II.—BRIDGES.

315. **Kanara.**—An iron screw pile skew bridge of two spans, each 25½ feet on the skew, is under construction on the Arbail Ghát Road, about 7 miles from Karwar. It is on solid iron screw piles 6 inches diameter ; four piles in each abutment and the central pier ; wrought iron girders, resting on caps with 18-inch bearing, fitted on to tops of piles ; roadway of teak poles (ballies) spiked to girders, not touching, with intervals filled with smooth pebbles, and over that concrete and broken laterite and sand ; hand rails teak ; width of roadway 18 feet ; the piles which went down from 20 to 25 feet, screwed in by capstan heads fitted to piles and worked by winches, aided by men at the capstan bars ; piles were kept in position by a frame of trestles strongly secured together. This construction is both economical and rapid in execution. Estimated amount, Rs. 13,868 ; expenditure, Rs. 10,711.

Chendia Bridge.

316. A masonry bridge of three spans of 33½ feet, rise ⅛, is in progress on the Haliyál and Lingunmutt Road. The foundations have been got in, and about half the superstructure raised up to springing. This work has been delayed by a severe outbreak of cholera in March. Estimated amount, Rs. 16,294 ; expenditure, Rs. 6,879.

Alnáwar Bridge on Lingunmutt Road.

317. A masonry bridge of three 33½-feet span, ⅓ rise, on the Dharwar and Coompta road about 9½ miles from Coompta. Materials collected. Estimated amount, Rs. 19,875; expenditure, Rs. 5,469.

Anagundi Bridge on Coompta Road.

318. This is a masonry bridge of one 40-feet span, on the Haliyál-Yellápur Road (about 8 miles from Yellápur). The expenditure incurred has been principally on the collection of material. An outbreak of cholera greatly interfered with this work also. Estimated amount, Rs. 7,180; expenditure, Rs. 3,976.

Dowghee Nullah Bridge, near Tattihalla.

319. **Dharwar.**—A culvert, which was washed away during a flood, has been replaced by an iron plate girder bridge 25 feet span, 12 feet 6 inches high, and 22 feet wide between the parapets. The roadway is supported on round teak rafters. Estimated amount, Rs. 5,416; expenditure, Rs. 4,708.

Culvert on Bellary and Karwar Road.

320. The foundations of this bridge have been completed; one pier finished up to the top of the cutwaters, and a second about half finished. The remaining pier and both abutments are in progress. The piers and abutments are of rubble coursed masonry. Timber has been purchased for girders and roadway, and all the iron-work has been prepared. The girders are to be of teak, trussed with iron rods. Estimated amount, Rs. 45,976; expenditure, Rs. 25,139.

Sirsupi Bridge.

321. Teak girders, 52 feet in length, and trussed with iron, have been prepared for this bridge, and forwarded to the site. The masonry of the abutments has been raised, and masonry groynes up-stream to direct the water to the centre of bridge have been constructed. Estimated amount, Rs. 8,417; expenditure, Rs. 5,491.

Arwadgi Bridge.

322. Bridges over the Dewali and Bhorekundi Nullahs, at 48 and 49½ miles from Dharwar, have been commenced. Estimated amount, Rs. 22,811; expenditure, Rs. 3,661.

Improving Dharwar and Tenai Ghát Road.

323. Three slab drains have been built between Mundergi and Kulkera. Estimated amount, Rs. 2,989; expenditure, Rs. 984.

Drains on Másur to Mundergi Road. (Local Funds.)

324. **Ratna'giri.**—Ninety-eight dry stone drains of openings, varying from 1½ feet to 3 feet, and 11 culverts of spans from 6 to 10 feet, have been built. The approaches to culverts and drains have been raised with a few exceptions. Estimated amount, Rs. 1,01,085; expenditure, Rs. 72,609.

Bridges and drains on the Ratnágiri and Chiplun Road.

325. **Kolha'pur.**—This work is in progress. Estimated amount, Rs. 42,708; expenditure, Rs. 20,071.

Bridging nullahs on Kolhápur and Miraj Road. (State Funds.)

326. No. 2 pier of this bridge has been brought up to springing by an addition of 12 feet to the height of last year's work; No. 3 pier carried from foundation to springing, a total of 51 feet; No. 4 pier founded, and one course of superstructure laid, and the foundation for the abutment has been excavated to rock, and almost prepared for building on. Estimated amount, Rs. 1,84,374; expenditure, Rs. 39,231.

Bridge over the Panchganga River at Kolhápur. (State Funds.)

327. The bridge is to be of stone masonry throughout, eleven spans of 70 feet each; height of roadway above river bed is 80 feet. Six piers have been founded, and their superstructure carried up to an average height of 17 feet. The foundations of the south abutment and of the southernmost pier have been completed, and that of another has been commenced. Estimated amount, Rs. 3,98,339; expenditure, Rs. 1,63,275.

Bridge over the Krishna River at Udgaon. (Contributions.)

328. **Satara.**—The south abutment of this bridge and its return walls, and pier No. 1 next to it, have been raised to springing level, 41 feet above river bed, whilst the north abutment has been raised 6½ feet above foundation level, which is two feet below the river bed. Excavation for the foundations of piers Nos. 2 and 3 is in progress. Estimated amount, Rs. 98,530; expenditure, Rs. 73,910.

Bridge over the River Tárli, near Oomruj.

329. This bridge consists of three openings of 22-feet span, carried on iron piles 14 feet high. The piles and girders are of old railway iron, the piles being shod with Mitchell's screw shoes 24 inches diameter,

Bridge over the Itolli Nullah.

and screwed 8 feet into the ground. The abutments are also of piles faced with dry stone. Completed at a cost of Rs. 6,359.

Wárna Bridge and approaches.

330. This bridge is to be of eight 60-feet masonry arches, the mean height to springing from foundation level being 42·78 feet. The approaches are 10,170 feet long, and will be cross drained by one 40-feet masonry arch, and two 5-feet culverts. Work was commenced in December 1875, and by 31st March the foundations of 4 piers, varying in depth from 16 to 26 feet below ground level, and from 3 to 8 feet below water level, were excavated and filled in, and the superstructure was raised to an average height of 23 feet over foundation level. The earthwork of the approaches on the Satara side of the river has been nearly completed, and that on the Kolhápur side commenced. Expenditure, Rs. 36,640.

Bridge over the Chinchnera Nullah on the Satara-Tásgaon Road. (Local Funds.)

331. A masonry bridge of two 20-feet arches, commenced by the civil authorities, and completed by the Public Works Department at a cost of Rs. 3,411.

Wasna Bridge. (Local Funds.)

332. This is a bridge of five 40-feet masonry arches; mean height of pier 18 feet; it crosses, at their confluence, two nullahs that caused considerable obstruction to traffic between Satara and Koregaon. Work was commenced in November last, and three piers and one abutment were carried up to within an average of 4 feet of springing level. The foundations of the remaining abutment and pier have been filled in. Estimated amount, Rs. 43,715; expenditure, Rs. 14,001.

Bridge over the River Mánd at Cheregaon. (Local Funds.)

333. This is a masonry bridge of three 30-feet arches, the mean height of pier being 15 feet. The abutment on the Umruz bank of the river has been raised 8 feet above foundation level, and the excavation for one of the piers was nearly completed. Owing to the quantity of water in the river, a steam pump had to be used. Estimated amount, Rs. 21,325; expenditure, Rs. 5,429.

Masonry Bridges on the Satara and Tásgaon Road. (Local Funds.)

334. These are three in number, two of two 20-feet segmental arches, and one of two 25-feet openings. The foundations have been excavated, and materials collected. Estimated amount, Rs. 13,278; expenditure, Rs. 2,135.

A flying bridge at Párgaon.

335. **Poona District.**—A flying bridge has been established at Párgaon on the Bhima River, Sirur-Neera Bridge road, affording means of access during the monsoon between Sirur and the G. I. P. Railway Station at Kedgaon. Standards have been erected on which to stretch a 3½-inch wire rope; distance between points of support 1,300 feet, with a droop of 33 feet. Cost Rs. 6,070.

Bridge over the Tanna Creek. (Local Funds.)

336. **Northern Konkan.**—The iron bridge over the Creek at Tanna has been commenced, and the east abutment nearly completed; the excavation for west abutment taken out, and foundings for some of the iron cylinders excavated. The bridge consists of 12 spans of wrought iron girders 50 feet span each, and one central span, 80 feet clear, supported on cast-iron columns filled with concrete, the columns supporting the central span being 4 feet diameter, and the others 3 feet diameter. The roadway is 18 feet in width, and provides a clear headway of 20 feet above high-water mark in centre. The work having been commenced late in the season, no large expenditure has been incurred on it in the year. Estimated amount, Rs. 1,55,242; expenditure, Rs. 7,487.

Culverts on the Manmád and Kopergaon Road.

337. **Nasik.**—On the road from Munmad to Kopergaon, between miles Nos. 14 and 15, near the town of Yeola, there are three nullahs which, in the rainy season, are almost impassable, and even in fair weather are a great obstruction to traffic. To obviate this, the course of the first nullah has been blocked up, and its current carried to join that of the second nullah, over which a culvert of two arches, each of 12 feet span, has been constructed. A drain of 4 vents (each 3 feet in diameter) has also been constructed on the third nullah. Completed at a cost of Rs. 6,799.

Bridges on the Manmád and Yeola Road.

338. The portion above springing of the condemned bridge No. 39, on the Manmád and Yeola Road, has been taken down and re-built. A bridge of 30-feet span has also been constructed on the next nulla, exactly similar in dimensions and style to No. 39. Completed at a cost of Rs. 8,863.

Bridge over the Tapti River at Surat. (Contribution.)

339. **Surat and Broach.**—The width of the River Tapti, at the town of Surat, is about 1,700 feet. The bank on the Surat side is above the level of ordinary monsoon floods, while the whole country on the opposite side of the river is so low, that it is flooded to a

distance of 2 miles from the bank during parts of nearly every monsoon. The bridge to span this river was designed by a Committee consisting of the Consulting Engineer to Government for Railways and three Civil Engineers, and consists of 17 spans of wrought iron Warren lattice girders, carried upon piers formed of iron cylinders. Each pier is composed of two columns of cast-iron cylinders, placed 20 feet apart from centre to centre, and strongly joined together by lattice bracings; the diameter of the columns is 4 feet above the ordinary low water of the river, and 5 feet below that level, a taper length being inserted to connect the cylinders of unequal diameter. The main girders are each 10 feet high and 103 feet long. The roadway consists of two planked footpaths, 5 feet wide, for passengers, and a macadamized roadway carried on buckled plates of wrought iron for cart traffic.

On the north bank of the river ramps of earth are carried down to the right and left of the bridge in the shape of the letter T. These ramps are pitched with stone on the side slopes and paved with stone on the upper surface, up to the level of the highest known flood. On the south bank, or Surat side of the river, the approaches run through the end of the old castle, crossing the castle moat by a small iron bridge of two 30-feet spans carried on 2 feet 6 inches diameter cast-iron screw piles. A small one-roomed house for the Toll Collector is placed at the south end of the bridge.

The first cylinders for the piers did not arrive at Surat till May 1875, and consequently very little work was done before the monsoon of that year; however, 4 piers were commenced, and the greater part of the earthwork on both banks was finished before the monsoon, when the works were closed till the beginning of October. Out of 36 columns 33 have been sunk to their full depth, and the remainder have been pitched in position and were progressing rapidly towards completion. The *average* depth of sand, mud, and clay, through which each column had to be sunk, was 43 feet. The difference of soil found in the cylinders was very great; in some it was a water-tight clay which enabled the cylinders to be pumped dry and excavated by ordinary coolies; in others Bulls' patent dredgers were used with success, and in some dress divers alone could be employed. In 5 or 6 columns, layers of limestone, about 9 inches thick, were found, alternating with sand and sandstone, and in one column a layer of limestone 6 feet thick was passed through before the yellow clay, on which every column is founded, was met. Of the columns so sunk to their full depth, 31 have been mounted up to their full height, braced together, and filled with concrete. The bridge on the south or town side met the main road of the town at a very awkward angle, and to improve this in a slight degree, a police watch-house and some latrines had to be pulled down and re-built in another place. Some of the walls of the old castle had to be patched up more than had been previously considered necessary, and these items caused extra expense. Revised estimated amount, Rs. 7,04,512; expenditure, Rs. 3,16,748.

Funds have been provided as follows:—

Government	2,00,000
Local Funds	3,50,000
Surat Municipality	80,000
Ránder do.	20,000
Total...	6,50,000

Bridge over Sipan Kharee. (Local Funds.)

340. A bridge of 2 spans of 40 feet each has been constructed on the road from Wálod to Boohari, at a cost of Rs. 9,301. The superstructure is of timber on masonry abutments and piers.

Bridge over the Udna Kharee. (State work.)

341. Materials have been collected for the construction of a low level bridge over the Udna Kharee on the Surat and Sachin Road. Estimated amount, Rs. 14,306; expenditure, Rs. 6,547.

Bridge over the Wánkáner River. (Local Funds.)

342. A bridge over the Wánkáner River on the road from Bárdoli to Wánkáner has been in progress. Estimated amount, Rs. 9,522; expenditure, Rs. 4,067.

Bridge over the Wankee River. (Local Funds.)

343. Materials have been collected for the construction of this bridge on the road from Bulsar to Dharampur. Estimated amount, Rs. 26,978; expenditure, Rs. 9,998.

Bridge over Pungaum Kharee. (Local Funds.)

344. A timber topped bridge (single span of 30 feet) on masonry abutments, with roadway 12 feet wide, has been constructed over the Pungaum Kharee at Sukurpur in the Broach Collectorate. Completed for Rs. 3,304.

345. One culvert, 1 span of 10 feet, and two barrel drains of 3 feet opening, have been constructed on the road from Bárdoli to Karod. One barrel drain of 3 feet is in progress, and the road surface has been levelled. Estimated amount, Rs. 3,038; expenditure, Rs. 2,623.

Drains and culvert on the road from Bárdoli to Karod. (Local Funds.)

346. **Ahmedabad.**—The causeway (341 feet by 28 feet 6 inches) with side slopes 1½ to 1, is made of large boulders, the surface at present being covered with a roadway of earth and kunkers. The approaches are paved with dry rubble stone to the length of 145 feet on each side, and the side slopes are 1 to 1, pitched with rubble stone and lime. Estimated amount, Rs. 10,664; expenditure, Rs. 7,855.

Causeway across the Kharee on the Gogo Road.

347. Nearly the whole of this bridge was carried away by the heavy flood of September 1875. There were 23 spans, out of which only 4 on the city side, and one on the other side, are standing. Materials of 15 spans have been found in the bed of the river at different places, and loose wood-work at various villages near the banks. Eleven spans of the above have been recovered, and the iron-work dismantled and brought into store as well as wood-work. Estimated amount, Rs. 5,732; expenditure, Rs. 2,997.

The Ellis Bridge.

348. The bridge consists of one span of 20 feet, rise 5 feet, abutment walls 5 feet thick and 10 feet high. The foundations have been filled in with concrete and burnt brick and lime, and the superstructure nearly completed, and materials collected for continuing the work. Estimated amount, Rs. 2,918; expenditure, Rs. 2,000.

Bridge over the Meethakhalee Nulla in the Daskroi Taluka. (Local Funds.)

349. The bridge is of one span of 12 feet, rise 3 feet, abutment walls 3 feet 4½ inches thick, 6½ feet high. The foundations have been filled in with burnt brick and lime, on concrete. Estimated amount, Rs. 3,105; expenditure, Rs. 999.

Bridge over the Nulla near the village of Oosmanpoor in the Daskroi Taluka. (Local Funds.)

350. **Lower and Central Sind.**—The contractor of this bridge proved to be very dilatory, and a portion of the work was therefore carried out departmentally. Six kurriahs in the Haidarabad Taluka were bridged this year. Estimated cost, Rs. 69,596; expenditure, Rs. 33,095.

Bridge on Ahmedabad and Haidarabad Road.

351. Nothing has been done in the year owing to a delay in providing the Local Funds contribution. The bridge is to be a masonry one of 7 spans, each of 15 feet, and will replace a former structure washed away. It is on the road from Kotri, and just outside of Kotri. Estimated cost, Rs. 5,391; expenditure, Rs. 3.

Bridge over Rosswah Kotri. (Local Funds.)

Bridge over Nurwáh on Jacobabad and Dilmorad Road.

352. **Jacobabad.**—This bridge consists of one arch of 30-feet span. Completed at a cost of Rs. 2,961.

Re-building bridges on Jacobabad and Thul Road.

353. This work has progressed slowly owing to the late floods, and the difficulty of procuring brick earth. Estimated amount, Rs. 10,780; expenditure, Rs. 5,498.

Bridges and culverts on Shikárpur Road.

354. These bridges and culverts are in progress. Estimated amount, Rs. 7,953; expenditure, Rs. 3,259.

Bridge over Sonwah at Thul.

355. The foundations of this bridge have been got in, and the abutments built 5 feet high since the canal dried up. Estimated amount, Rs. 3,314; expenditure, Rs. 991.

IV.—ACCOMMODATION FOR TRAVELLERS.

Dhurumshala at Munguti. (Local Funds.)

356. **Belgaum.**—The dhurumshala has been completed at a cost of Rs. 3,331.

Dhurumshala at Mokhada. (Local Funds.)

357. **Northern Konkan.**—At Mokhada a dhurumshala has been built for Rs. 2,999.

Dhurumshala at Samadra. (Local Funds.)

358. **Kaira.**—This dhurumshala will accommodate travellers on the Ahmedabad and Kaira Road. Estimated amount, Rs. 2,114; expenditure Rs. 989.

Dhurumshala at Viramgám. (Local Funds.)

359. **Ahmedabad.**—A dhurumshala has been constructed at Viramgám for Rs. 2,988.

Staging Bungalow at Thul.

360. **Jacobabad.**—Has been completed at a cost of Rs. 3,742.

V.—MISCELLANEOUS PUBLIC IMPROVEMENTS.

I.—MUNICIPAL WORKS.

361. **Bombay.**—A foot-path and a bridle-ride from near the Cooperage Overbridge to the Marine Lines Station, and from opposite the Hindoo burning-ground to the Level Crossing at Chowpatty, have been constructed; the whole of the ride has been turfed. Wrought iron railings on parapet walls have been placed across the ride and foot-path, with two entrance gates at each end, namely, two at the Chowpatty Level Crossing, and two at the Cooperage Overbridge. The middle portion of the foot-path and ride will be constructed when the Sonapore Reclamation has been completed. Estimated amount, Rs. 15,402; expenditure, Rs. 11,399.

Ride and foot-path along the sea-face of the Back Bay Reclamation.

362. The railing and filling in and turfing have been carried out, and a portion of the plot has been prepared for planting trees in. Completed for Rs. 4,224.

Turfing and planting with shrubs the Plot No. 3 on the Back Bay.

363. Filling in and cutting has nearly been completed. Amount of estimate, Rs. 3,620; expenditure, Rs. 2,793.

Draining off flood water from Plot No. 3 near the Churney Road Station.

364. **Aden.**—The duct was opened throughout its whole length, thoroughly cleaned, and again covered in. The supply of water from the Shaik Othman wells was thereby sensibly increased. Cost, Rs. 6,328.

Opening of the Shaik Othman Duct.

365. **Dharwar.**—A well at Musputy in Annigeri is in progress. Estimated amount, Rs. 2,862; expenditure, Rs. 989.

Well at Annigeri. (Local Funds.)

366. Improvements to the tank at Devihusur is in progress. Estimated amount, Rs. 3,624; expenditure, Rs. 1,157.

Tank at Devihusur. (Local Funds.)

367. The tank has been deepened 4 feet in rock, and a dry stone retaining wall and four stairs have been built; two of the stairs are of rubble in mortar, and two of dry rubble pointed on the top. Estimated amount, Rs. 3,920; expenditure, Rs. 2,865.

Tank at Byádgi. (Local Funds.)

368. Improvements to this tank are in progress. Estimated amount, Rs. 3,749; expenditure, Rs. 1,487.

Tank at Haliyál. (Local Funds.)

369. The tank has been deepened, dry rubble retaining wall built round inside, stairs built, and feed channel cleared. Cost, Rs. 2,754.

Tank at Lalgutti. (Local Funds.)

370. Improvements have been made to this tank at a cost of Rs. 2,299.

Tank at Gudisagur. (Local Funds.)

371. **Belgaum.**—The improvements to this tank are in progress. Estimated amount, Rs. 2,828; expenditure, Rs. 999.

Tank at Kudalga. (Local Funds.)

372. **Kala'dgi.**—A well has been constructed at Telikeri at a cost of Rs. 2,786.

Well at Telikeri. (Local Funds.)

373. The construction of a well at Honwar is in progress. Estimated amount, Rs. 3,869; expenditure, Rs. 318.

Well at Honwar. (Local Funds.)

374. **Kolha'pur.**—The works connected with the supply of water to the town of Kolhápur, from funds provided by the Kolhápur State, have been commenced, and are in progress. Estimated amount, Rs. 2,20,279; expenditure, Rs. 16,626.

Water-works. (State Funds.)

375. These water-works are in progress. The wind engine is nearly ready, and works generally are almost completed. Expended up to date Rs. 80,347.

Echulkurunji water-works. (State Funds.)

376. Improvements to the tank at Surud have been completed at a cost of Rs. 5,036.

Tank at Surud. (State Funds).

377. The work of lining and puddling the storage tank at Echulkurunji has been completed. Estimated amount, Rs. 17,540; expenditure, Rs. 15,075.

Tank at Echulkurunji. (State Funds.)

378. The work of supplying the town of Mudhol with water has been temporarily stopped, and a new project has since been sanctioned. The cost is borne by the Mudhol State. Estimated amount, Rs. 1,35,098; expenditure, Rs. 3,310.

Mudhol water-supply. (State Funds).

379. The work has been completed, but the success of the arrangement remains to be tested when the rain falls. Estimated amount, Rs. 4,275; expenditure, Rs. 4,608.

Kágal water-supply. (State Funds).

Jumkhundi water-supply. (State Funds).

380. This work is in progress. Estimated amount, Rs. 49,531; expenditure, Rs. 38,353.

Two wells on the Miraj and Kolhápur road. (State Funds.)

381. One of these wells has been completed, and the other is in progress. Estimated amount, Rs. 3,484; expenditure, Rs. 576.

Water-works. (State Funds.)

382. The temporary head works are in progress. Estimated amount, Rs. 9,000; expenditure, Rs. 5,494.

383. **Northern Konkan.**—At Matheran the new masonry dam has been completed

Dam at Matheran. (Local Funds.)

Some trifling expenditure will be incurred to water it during the hot weather, and to effect certain small items prior to handing it over after next rains. Cost, Rs. 16,088.

384. **Na'sik.**—This useful work has been completed, and has given considerable satisfaction to the town people. Three good dipping wells have been built in the town; and iron piping laid from an original dipping well to them, and ball cocks fitted to prevent flooding.

Yeola water-works. (Contribution.)

The pipes had to be sunk 8 and 9 feet in hard soil and in very narrow lanes in the town, so that the work was a very troublesome one. The supply well has been neatly roofed in, and a double lift worked by bullock-power fitted to it. The Yeola people are well pleased, and now desire an extension of the scheme. Estimated amount, Rs. 9,975; expenditure, Rs. 6,701.

385. **Khandesh.**—This work has been carried out by the Forest Officer. The sinking of the wells is in progress. Estimated amount, Rs. 5,000; expenditure, Rs. 1,578.

Wells, Dang Forest Roads.

386. **Surat and Broach.**—The foundations have been completed, and the masonry work is in progress. Estimated amount, Rs. 2,500; expenditure, Rs. 1,620.

An Owara to the tank, and deepening the tank at Sarun in the Wágra Taluka. (Local Funds.)

387. The foundations of both these Owaras have been completed, and their masonry works are in progress. Estimated amount, Rs. 5,720; expenditure, Rs. 2,486.

Two Owaras to the tank at Tunkaria Bunder in Jambusar Taluka. (Local Funds.)

388. The well has been sunk, and the masonry works are in progress. Estimated amount, Rs. 3,920; expenditure, Rs. 1,218.

Well at Oober in Jambusar Taluka. (Local Funds.)

389. **Kaira.**—The first ten of the wells, *vide* the following statement, have been completed, and the others are in progress, and will probably be finished in 1876-77:—

Wells in the Kaira Districts. (Local Funds.)

Where constructed.	Estimated Amount.	Expenditure.
	Rs.	Rs.
Wásad	2,766	2,761
Aklacha	2,307	2,346
Aleena...	2,719	2,380
Raska	1,213	1,010
Sumaspoor	1,457	1,215
Kashipoor	1,065	901
Wásna...	1,918	1,886
Meghwa	1,806	1,672
Sonipoor	2,439	1,816
Behedwa	551	550
Khandhlee	2,031	1,618
Mokwa...	1,371	894
Baora	1,138	506
Sahihat	2,284	645
Rustumpoora	2,284	1,023
Nariád Railway Station	1,563	637
Improvements to well at Kuloli	1,694	298
Improvements to water-supply at Chipdi	2,092	1,196

Tanks in the Kaira Districts. (Local Funds.)

390. The first six of the tanks, *vide* following statement, have been completed, and the others are in progress, and will be finished in 1876-77 :—

Nature of Work.	Estimated Amount.	Expenditure.
	Rs.	Rs.
Gurnalas to the tank at Dehmi...	1,662	1,660
Excavating tank and constructing Gurnalas to the tank at Behedwa	1,169	1,128
Excavation in do. do.		
Moleshwer tank at Nariád	2,485	1,951
Tank at Ambad	1,978	1,972
Do. Arera	3,909	3,415
Completing the tank at Ode	8,671	7,343
Tank at Franja...	2,154	1,791
Do. Dendurda	2,076	2,058
Do. Gomdi	3,538	2,350
Do. Pipluj	3,095	1,042
Do. Dyup	2,846	994
Do. Wadad	1,934	785
Do. Boriavee	3,100	2,298
Do. Soondulpoor...	2,578	1,445
Do. Pamol	786	499

Wells on the extra Municipal roads outside the City of Ahmedabad.

391. **Ahmedabad.**—These wells, four in number, have been completed in the year. The wells are 6 feet interior diameter, and have been excavated to a depth varying from 39 feet to 44 feet. They are surrounded with a parapet wall three feet high. Masonry pillars with teak-wood beams have been provided for raising water by "Koss" and bullocks. Cost, Rs. 3,822.

Excavating a channel from the Moonsur Tank to the Wagoda at Viramgám (Local Funds.)

392. The Moonsur Tank at Viramgám not being capable of containing all the water which passed into it during the monsoon, the fields in the neighbourhood were flooded and rendered unfit for cultivation; and the water after the monsoon caused much unhealthiness. A cut 4 feet wide at bottom with side slopes ½ to 1 has been made from the tank to the Wagoda (waste land) a little over two miles off, the length of the channel being 12,400 feet. This cut has had the desired effect of carrying off the surplus water of the last monsoon. As the cut crossed one of the main roads into Viramgám, a culvert with roadway 20 feet wide has been constructed. Cost, Rs. 2,603.

II.—HARBOUR IMPROVEMENTS.

Reclaiming the ground for rounding off the angle near the Sonapore Drain.

393. **Bombay.**—The progress of this work during the current year has been slow, owing to the want of energy displayed by the contractor. It is, however, nearly finished, so far as sand work is concerned; but the stone bulwark remains to be strengthened. Estimated amount, Rs. 1,29,910; expenditure, Rs. 66,009.

Extension of the Post Office Pier. (Port Funds.)

394. **Aden.**—The existing pier did not allow of barges or other craft to be moored alongside at low water. The work carried out consisted in extending the pier a distance of 75 feet, by which means even at the lowest spring tides a depth of 9 feet of water was secured. The embarkation of troops, stores, &c., can now be carried out uninterruptedly. Estimated amount, Rs. 20,000; expenditure, Rs. 19,949.

Masonry wall in front of the Dutch Bunder at Surat.

395. **Surat.**—Completed, with the exception of a little earth filling and fixing a portion of the iron railing. The new wall is 240 feet long and 29 feet high, measured from the bed of the river. The superstructure is built with English pattern bricks, and faced with ashlar up to the level of the ordinary high spring tides. The wall above foundations has a mean thickness of 6 feet 4½ inches, with a batter of 1 in 4·8. The courses are laid at right angles to the face. Estimated amount, Rs. 52,307; expenditure, Rs. 47,712.

396. **Kurrachee Harbour Works.**—The funds assigned were more than required for the further works in hand, as the original project was ordered to be closed by Government, so that about a quarter of a lakh of rupees was subsequently transferred to repairs, and about Rs. 18,000 for buildings at the Presidency. The expenditure on Original Works for the year was Rs. 39,699; on Repairs and Tools and Plant, Imperial, Rs. 33,577; and on Establishment, Rs. 29,742. Mr. Price returned from furlough and resumed charge from Mr. Hart on 13th December 1875.

397. During the year, all buildings and structures at Manora, and within high water mark of the harbour, were placed under this charge. The only new work of importance executed under this head was the construction of quarters for a portion of the Indo-European telegraph staff at Manora, at a cost of Rs. 6,450.

398. The break-water stood well during the monsoon of 1875, which was not, however, a very heavy one; but it was thought desirable to shift in a few blocks on the sea-side in the same way as had been effectually done the previous year, in order to bring them to a better bearing; also the levelling of the top with concrete was extended for a length of 150 feet, the portion between 109 feet and 259 feet from shore, where settlement seems to have ceased. A sad accident occurred in September by the wreck of a "Cotia" (native vessel from Cutch) against the break-water. This has, of course, been fully described in the reports of the Port Department, so that here it need only be further mentioned that the break-water suffered no injury by the collision, and that steps have since been taken by the Port Department to light the outer end, during all, except the actual monsoon season.

399. The chief work executed during the year was the dredging of the entrance channel, which was resumed on the 18th January 1876, and lasted up to the end of April last. Except some aid in removal of patches of rock and boulders, the work may now be said to be confined to the maintenance of the channel at its width of 500 feet and depth of 20 feet at low water, but could, it is believed, be greatly reduced, if not altogether dispensed with, if the cross rush of the flood were shut off by the extension of East Pier, and the ebb brought more to bear on the channel by the removal of Deep Water Point. The shelter of the channel by the break-water is quite effectual and satisfactory as to guarding it from any accumulation from outside.

400. Thirty-nine thousand two hundred and ninety-eight tons were dredged from the Channel during the official year. Also 101 tons of stone were removed by the diving party. The expenditure of the official year on bar dredging and removal of rock, including maintenance and repairs of the dredges during the monsoon, was Rs. 19,898. Some dredging was also done on the bar at the mouth of the New Channel, a little above Keamari, in the shape of a month's experimental work, in which 22,296 tons were removed at a cost of Rs. 8,994 from a deep centre cut, which has not fully maintained itself, but seems nevertheless, on the whole, to have done good, as the bar has deepened from 2½ to 4 feet, and shows a general deepening of 25,800 tons, against 22,296 tons removed by the dredge. A sum of Rs. 2,672 was expended in pitching the sides of the New Channel at intervals between Keamari and the Native Jetty, so as to keep the scour in the proper lines; also Rs. 1,649 on improving the channel along the north and north-west walls of the Native Jetty.

401. As regards the general state and progress of the harbour, it will probably be sufficient here to summarise the results of the periodical surveys and reports.

Harbour Surveys.

402. The deep entrance channel is well maintained with the aid of the dredging just mentioned; its shelter by the break-water is perfect; but it requires the extension of East Pier and removal of Deep Water Point to prevent the continued accumulation by cross rush of flood and want of ebb scour, east of the channel; the bar shows a general deepening, owing to the ebb being directed on it by Deep Water Point.

Entrance.

403. The Manora anchorage shows no material difference from its state of last year.

Lower Harbour.

404. Between Manora and Keamari, the channel shows a progress of deepening on the east and filling up on the west side, both a continuation of what was looked for, and is desirable towards the full improvement of that part. The deepening on the east side might, with great advantage, be assisted by dredging at moderate cost. The Keamari anchorage shows further deterioration during the year by deposit of material carried down from the New Channel by the Chinna Creek waters. Its area within the 20-foot contour which, before the diversion of the Chinna Creek waters, had increased by the operation of the Keamari groyne to about 31 acres, is now reduced to rather less than 19, just what it was in 1858,

though still more useful than it was at that time, owing to freedom from eddies. The loss, however, is now progressing much more slowly. There can be no doubt also that it is only temporary, and measures have been proposed by which, if carried out, a return to improvement may soon be looked for. On the whole, the anchorages of the Harbour are capable now of accommodating about double the tonnage which they could before the commencement of the improvement works.

New Channel and Chinna Creek Diversion.

405. The Chinna Creek scour has continued to work favourably for the New Channel, which is now (except the bar at its mouth where there are 1 or 2 feet less) about 5 feet deep at low water up to the Native Jetty, so that lighters can pass at almost all times of tide, and native sea-going craft passing at high water now overload at the Jetty instead of as formerly by lighters at Keamari. The action of the scour is now becoming much more slow, however, as the channel only deepened an average of 5 inches during the past year. There is a large reserve of scouring power still available in the ebb tide, but it is counteracted by hard and stiff material, especially near the neck of the Channel. To make the Channel amply sufficient for requirements of trade, it would require to be deepened to 9 feet, *i.e.*, 4 feet more than at present; and to accelerate this, as well as to bring the earlier about a return to improvement at the Keamari anchorage and the setting free of the Chinna Creek waters as originally designed for the benefit of the inner harbour and entrance, some supplementary expenditure has been lately recommended in aid to scour.

Harbour generally.

406. Speaking generally of the harbour, the entrance, to use the words of Captain Giles at a recent discussion before the Institute of Civil Engineers, is now "all that can be desired;" and though, no doubt, the improvements cannot as yet be pronounced complete, inasmuch as the entrance is not altogether self-maintained, and further internal accommodation is required, the statistics of the Port now show clearly that, in spite of all drawbacks, Kurrachee is already proved to be suitable for an extensive trade in shipping of large tonnage at all seasons of the year.

No. I.

The GRANTS and OUTLAY for the Public Works of the Bombay Presidency during the Year 1875-76 (*exclusive of Railways*) *were as follows :—*

Works.	Grant.	Outlay.	Saving.	Excess.
	Rs.	Rs.	Rs.	Rs.
Imperial, Ordinary	18,20,685	16,57,966	1,62,719	...
Do. Agricultural	19,96,512	18,17,577	1,78,935	...
Provincial Funds	24,80,541	23,39,186	1,41,355	...
Contributions	11,92,045	8,39,084	3,52,961	...
Local Funds	27,65,033	18,85,166	8,79,867	...
Total ...	1,02,54,816	85,38,979	17,15,837	...
Establishment.				
Imperial, Ordinary	4,05,000	4,23,342	....	18,342
Do. Agricultural	5,88,288	6,10,045	...	21,757
Provincial Funds	8,83,350	9,63,438	...	80,088
Contributions	5,531	5,529	2	...
Local Funds	3,13,831	2,21,711	92,120	...
Total ...	21,96,000	22,24,065	...	28,065
Grand Total ...	1,24,50,816	1,07,63,044	16,87,772	...

Cost of Establishment, Rs. 22,24,065, gives a percentage of 28·88 on the Expenditure Imperial, Provincial, and Local, of Rs. 76,99,895. Including Contributions and Expenditure debitable to Local Loans and Forest and Telegraph Departments, the percentage is 25·29.

The figures shown in the column "Grant" are the modified grants as they stood at the close of the year.

The figures given above under "Grant" and "Outlay" are exclusive of Expenditure in England on the Ordinary and Extraordinary grant, which amounted to Rs. 45,241, but inclusive of reductions and additions in suspense balances.

No. II.

IMPERIAL, ORDINARY.

STATEMENT showing the Grants and Outlay for Public Works under the Service Heads during the Year 1875-76.

Service Heads.	Grant.	Outlay.	Saving.	Excess.
Original Works.	Rs.	Rs.	Rs.	Rs.
Military	10,67,899	9,89,389	78,510	...
Civil Buildings	1,72,050	1,21,454	50,596	...
Miscellaneous Public Improvements ...	27,021	26,339	682	...
Total ...	12,66,970	11,37,182	1,29,788	...
Repairs.				
Military	4,86,986	4,57,523	29,463	...
Civil Buildings	19,500	18,390	1,110	...
Miscellaneous Public Improvements ...	26,229	25,179	1,050	...
Total ...	5,32,715	5,01,092	31,623	...
Establishment	4,05,000	4,23,342	...	18,342
Tools and Plant	21,000	19,692	1,308	...
Grand Total ...	22,25,685	20,81,308	1,44,377	...

No. III.

IMPERIAL, AGRICULTURAL.

STATEMENT of Grants and Outlay for Public Works under the Service Heads during the Year 1875-76.

Service Heads.	Grant.	Outlay.	Saving.	Excess.
Extraordinary.	Rs.	Rs.	Rs.	Rs.
Original Works	6,22,142	3,87,579	2,34,563	...
Repairs	...	11,680	...	11,680
Establishment	1,17,858	90,988	26,870	...
Tools and Plant	8,900	8,302	598	...
Total ...	7,48,900	4,98,549	2,50,351	...
Ordinary.				
Original Works	6,67,970	7,12,359	...	44,389
Repairs	6,76,000	6,64,478	11,522	...
Establishment	4,70,430	5,19,057	...	48,627
Tools and Plant	21,500	32,005	...	10,505
Profit and Loss	...	1,174	...	1,174
Total ...	18,35,900	19,29,073	...	93,173
Grand Total, Extraordinary and Ordinary.	25,84,800	24,27,622	1,57,178	...

No. IV.

PROVINCIAL.

STATEMENT showing the Grants and Outlay for Public Works under the Service Heads during the Year 1875-76.

Service Heads.	Grant.	Outlay.	Saving.	Excess.
	Rs.	Rs.	Rs.	Rs.
Original Works.				
Civil Buildings	12,78,714	11,64,053	1,14,661	...
Communications	4,61,886	4,29,991	31,895	...
Miscellaneous Public Improvements ...	22,723	20,411	2,312	...
Total ...	17,63,323	16,14,455	1,48,868	...
Repairs.				
Civil Buildings	3,08,244	3,14,985	...	6,741
Communications	3,46,836	3,46,836	...	...
Miscellaneous Public Improvements ...	19,280	18,465	815	...
Total ...	6,74,360	6,80,286	...	5,926
Establishment	8,83,350	9,63,438	...	80,088
Tools and Plant	42,858	44,249	...	1,391
Profit and Loss	...	196	...	196
Grand Total ...	33,63,891	33,02,624	61,267	...

No. V.

ABSTRACT of Expenditure from Contributions during the Year 1875-76.

Service Heads.	Contribution.	Outlay.	Saving.	Excess.
	Rs.	Rs.	Rs.	Rs.
Original Works.				
Military	10,998	10,481	517	...
Agricultural	15,225	12,520	2,705	...
Civil Buildings	2,57,156	1,39,160	1,17,996	...
Communications	2,48,446	1,58,647	89,799	...
Miscellaneous Public Improvements ...	13,353	7,881	5,472	...
Total ...	5,45,178	3,28,689	2,16,489	...
Repairs.				
Military	422	422	...	...
Agricultural	20,821	13,853	6,968	...
Civil Buildings	5,566	5,503	63	...
Communications	6,19,429	4,90,030	1,29,399	...
Miscellaneous Public Improvements ...	629	587	42	...
Total ...	6,46,867	5,10,395	1,36,472	...
Establishment	5,531	5,529	2	...
Grand Total ...	11,97,576	8,44,613	3,52,963	...

No. VI.

LOCAL.

STATEMENT showing the Grants and Outlay for Public Works under Service Heads during the Year 1875-76.

Service Heads.	Grant.	Outlay.	Saving.	Excess.
Original Works.	Rs.	Rs.	Rs.	Rs.
Civil Buildings	2,35,192	159,483	75,709	...
Communications	12,20,173	6,56,233	5,63,940	...
Miscellaneous Public Improvements ...	4,13,682	3,26,053	87,629	...
Total ...	18,69,047	11,41,769	7,27,278	...
Repairs.				
Civil Buildings	58,766	44,966	13,800	...
Communications	5,65,362	5,09,476	55,886	...
Miscellaneous Public Improvement ...	2,16,872	1,63,374	53,498	...
Total ...	8,41,000	7,17,816	1,23,184	...
Establishment	3,13,831	2,21,711	92,120	...
Tools and Plant	33,231	25,581	7,650	...
Reserve	21,755	...	21,755	...
Grand Total ...	30,78,864	21,06,877	9,71,987	...

No. VII.

ABSTRACT of Expenditure from Grants-in-aid to Provincial Works from Local Funds during the Year (taken from Statement No. VI).

Service Heads.	Contributions.	Outlay.	Saving.	Excess.
Original Works.	Rs.	Rs.	Rs.	Rs.
Civil Buildings	2,800	2,800	...	...
Communications	53,134	52,224	910	...
	55,934	55,024	910	...
Establishment	1,90,770	1,65,414	25,356	...
	2,46,704	2,20,438	26,266	...

No. VIII.

ABSTRACT of Expenditure from all descriptions of Funds during the Year 1875-76.

Service Heads.	Imperial.	Provincial.	Grants-in aid from Local Funds.	Contributions.	Local.	Total.
Original Works.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Military	9,89,389	...	...	10,481	...	9,99,870
Agricultural	11,01,983	...	...	12,520	...	11,14,503
Civil Buildings	1,21,454	11,64,053	2,800	1,39,160	1,56,683	15,84,150
Communications... ...	...	4,29,991	52,224	1,58,647	6,04,009	12,44,871
Miscellaneous Public Improvements	26,339	20,411	...	7,881	3,26,053	3,80,684
Total ...	22,39,165	16,14,455	55,024	3,28,689	10,86,745	53,24,078
Repairs.						
Military	4,57,523	...	...	422	...	4,57,945
Agricultural	6,76,158	...	...	13,853	...	6,90,011
Civil Buildings	18,390	3,14,985	...	5,503	44,966	3,83,844
Communications... ...	...	3,46,836	...	4,90,030	5,09,476	13,46,342
Miscellaneous Public Improvements	25,179	18,465	...	587	1,63,374	2,07,605
Total ...	11,77,250	6,80,286	...	5,10,395	7,17,816	30,85,747
Establishment	10,33,390	9,63,438	1,65,414	5,529	56,297	22,24,068
Tools and Plant ...	57,951	44,249	...	...	25,581	1,27,781
Profit and Loss	1,174	196	...	...	...	1,370
Grand Total ...	45,08,930	33,02,624	2,20,438	8,44,613	18,86,439	1,07,63,044

No. IX.

IMPERIAL.

STATEMENT showing the Details of Statements Nos. II. and III.

		Total of each Station.		
		Original Works.	Repairs.	Total.
	Military.	Rs.	Rs.	Rs.
Buildings for accommodation of European Troops.	Aboo	10,687	4,232	14,919
	Aden	43,134	21,694	64,828
	Ahmedabad	1,35,657	6,400	1,42,057
	Ahmednagar	11,292	12,899	24,191
	Baroda	22,996	2,742	25,738
	Belgaum	32,134	19,122	51,256
	Bhuj	.....	13	13
	Bombay	1,946	34,252	36,198
	Colába	1,36,296	30,401	1,66,697
	Deesa	5,438	10,134	15,572
	Deoláli	20,065	16,673	36,738
	Digri	274	.....	274
	Ganesh Khind	.....	843	843
	Gizri	554	2,471	3,025
	Hyderabad	2,622	5,427	8,049
	Khandála	.....	3,414	3,414
	Kirkee	721	8,284	9,005
	Kolháput	.....	79	79
	Kurrachee	6,352	16,356	22,708
	Málegaon	.....	350	350
	Poona, Ghorepuri and Wanowri	1,21,171	44,347	1,65,518
	Purandhar	23,461	7,454	30,915
	Rájkot	.....	144	144
	Satara	— 31	3,946	3,915
	Sholápur	4,683	547	5,230
	Sirur	.....	845	845
	Sukkur	105	220	325
	Surat	.....	199	199
	Tithal	.....	705	705
	Vingorla	.....	811	811
	Total	5,79,557	2,55,004	8,34,561
Buildings for accommodation of Native Troops.	Aden	2,343	7,456	9,799
	Ahmedabad	3,217	1,234	4,451
	Ahmednagar	705	469	1,174
	Bandora	1,481	548	2,029
	Baroda	25,605	717	26,322
	Belgaum	2,859	1,137	3,996
	Bhuj	538	819	1,357
	Carried forward	36,748	12,380	49,128

	Total of each Station.		
	Original Works.	Repairs.	Total.
	Rs.	Rs.	Rs.
Brought forward...	36,748	12,380	49,128
Military—continued.			
Buildings for accommodation of Native Troops.			
Bombay...	35,294	20,344	55,638
Deesa ...	.....	550	550
Dharwar ...	32,261	600	32,861
Ganesh Khind ...	.....	1,571	1,571
Góránári ...	.....	320	320
Hyderabad ...	1,264	1,050	2,314
Jacobabad ...	10,248	4,891	15,139
Kaládgi...	.....	284	284
Kashmor ...	.....	414	414
Kirkee ...	26,644	891	27,535
Kolhápur ...	630	873	1,503
Kurrachee ...	493	3,491	3,984
Málegaon ...	.....	561	561
Poona ...	11,772	5,029	16,801
Rájkot ...	9,821	1,983	11,804
Satara ...	651	2,275	2,926
Sholápur ...	2,535	392	2,927
Sui ...	.....	1,017	1,017
Sunri ...	.....	316	316
Surat ...	21	1,095	1,116
Tanna ...	22,559	792	23,351
Toj ...	.....	67	67
Total ..	1,90,941	61,186	2,52,127
Fortifications ...	72,444	8,990	81,434
Cantonment Works ...	47,715	72,471	1,20,186
Ordnance ...	64,806	24,407	89,213
Commissariat ...	16,350	17,223	33,573
Staff ...	24,791	1,763	26,554
Naval ...	5,666	16,479	22,145
	10,02,270	4,57,523	14,59,793
Less—Expenditure in England and decrease in Suspense Balances ...	12,881	.....	12,881
Grand Total...	9,89,389	4,57,523	14,46,912
Civil Buildings.			
Post ...	15,723	6,081	21,804
Telegraph ...	46,910	4,103	51,013
Mint ...	11,835	2,691	14,526
Currency ...	.....	913	913
Carried forward...	74,468	13,788	88,256

	Total of each Station.		
	Original Works.	Repairs.	Total.
	Rs.	Rs.	Rs.
Brought forward...	74,468	13,788	88,256
Civil Buildings—continued.			
Salt	47,427	3,525	50,952
Miscellaneous	.....	1,077	1,077
	1,21,895	18,390	1,40,285
Less—Expenditure in England	441	.....	441
Total... ...	1,21,454	18,390	1,39,844
Miscellaneous Public Improvements.			
Harbours	33,199	23,388	56,587
Light-houses	.....	1,840	1,840
	33,199	25,228	58,427
Less—Expenditure in England and decrease under Suspense Balances	6,860	49	6,909
Total... ...	26,339	25,179	51,518
Total Works	11,37,182	5,01,092	16,38,274
Establishment	.....	.....	4,23,342
Tools and Plant	.....	.....	19,692
Grand Total... ...	.....	.....	20,81,308
Irrigation—Extraordinary.			
Begári Canal	84,204	.....	84,204
Ekruk Tank	4,024	.....	4,024
Háthmati Canal	13,297	11,680	24,977
Krishna do.	3,792	.....	3,792
Lakh do.	27	.....	27
Mitrow do. (Eastern Nára Works) ...	.....	.....	.....
Mutha do.	2,57,690	.....	2,57,690
Palkhair do.	2,692	.....	2,692
Pánjhra (Mukti) Canal	17,837	.....	17,837
	3,83,563	11,680	3,95,243
Add—Increase under Suspense Balances, and deduct receipt on Capital Account	4,016	.....	4,016
	3,87,579	11,680	3,99,259
Establishment	.....	.....	90,988
Tools and Plant	.....	.....	8,302
Total... ...	.....	.....	4,98,549

	Total of each Station.		
	Original Works.	Repairs.	Total.
Agricultural—Ordinary.	Rs.	Rs.	Rs.
Doni Reservoir	2,898	...	2,898
Madag Tank	696	...	696
Mavinkop do.	607	...	607
Desert Canal	99,298	996	1,00,294
Eastern Nára Works	35,155	...	35,155
Fulaili Canal	11,814	...	11,814
Ghár do.	16,907	...	16,907
Khári Irrigation Sluices	15,604	...	15,604
Eastern Delta Survey	1,377	...	1,377
Western Nára	77,774	...	77,774
Jerruck Canal	179	...	179
Kashmor and Begári Bund	3,10,120	...	3,10,120
Hartala Tank	85	...	85
Jamda Canal	586	...	586
Mhawa Tank	24,259	...	24,259
Ojhar Canal...	12,107	...	12,107
Warali	236	...	236
Bhatodi Tank	1,458	...	1,458
Nira Canal	33	...	33
Márak Great Canal	1,266	...	1,266
Sakhar and Shadadpur Canal	42,198	...	42,198
Maini Tank...	13,279	...	13,279
Yerla Canal...	452	...	452
Tapti	...	193	193
Rohri and Hyderabad Canal Project Survey ...	30	...	30
Begári Canal	435	51,867	52,302
Nára Supply Channel	...	1,806	1,806
Sind Canal	978	14,651	15,629
Madag Tank	51	2,655	2,706
Mavinkop do.	...	885	885
Desert Canal	...	2,982	2,982
Cuts in the bed of Nára. }	...	11,518	11,518
Dimwah. }	...	4,589	4,589
Heranwah. } Eastern Nára Works {	...	36	36
Mitrow Canal. }	677	53,264	53,941
Thar do. }	2,315	10,846	13,161
Fulaili	976	98,399	99,375
Ghár Canal	2,505	33,962	36,467
Háthmati Canal	...	5,003	5,003
Khári Irrigation Sluices	—682	406	—276
Western Nára	1,415	62,895	64,310
Pinyari	1,727	21,328	23,055
Jamda Canal	1,076	2,551	3,627
Lakh do.	226	2,813	3,039
Palkhair do.	389	978	1,367
Panjar River Works, Dhulia Canal	294	486	780
Warali Canal	...	227	227
Bhatodi Tank	424	510	934
Ekruk do.	294	7,062	7,356
Kasurdi do.	21	164	185
Mutha Canal	...	13,818	13,818
Carried forward...	6,81,539	4,06,890	10,88,429

	Total of each Station.		
	Original Works.	Repairs.	Total.
	Rs.	Rs.	Rs.
Brought forward...	6,81,539	4,06,890	10,88,429
Agricultural—Ordinary—continued.			
Sakhar Canal	427	32,837	33,264
Chickhli do.	...	514	514
Gondewli do.	...	567	567
Krishna do.	49	4,436	4,485
Mani Tank	...	694	694
Rewari Canal	238	432	670
Yerla do.	...	1,023	1,023
Alibhar Kutcherry Canal	...	3,531	3,531
Marak Great do.	...	11,381	11,381
Sêttrazwah No. XXVIII	...	5,276	5,276
Canals in the Begári Collectorate...	1,000	25,603	26,603
Do. Belgaum do.	3,888	4,892	8,780
Do. Haidarabad do.	209	80,756 10,694	91,659
Do. Shikarpur do.	...	5,843 9,633	15,476
Do. Guzerat do.	...	604	604
Do. Kurrachee do.	7,824	48,004	55,328
Do. Khandesh do.	...	8,252	8,252
Do. Poona do.	...	90	90
Do. Ratnágiri do.	24	55	79
Ordinary Agricultural Works	19,706	2,471	22,177
	7,14,404	6,64,478	13,78,882
Less—Receipts on Capital Account, Expenditure in England, and decrease under Suspense Balances	2,045	...	2,045
	7,12,359	6,64,478	13,76,837
Establishment	...	...	5,19,057
Tools and Plant	...	...	32,005
Profit and Loss	...	...	1,174
Total ...	...	...	19,29,073

Digitized with financial assistance from the Government of Maharashtra on 11 July, 2017

No. X.

PROVINCIAL.

STATEMENT showing the Details of Expenditure of Statement No. IV.

Details.	Total of each Class.		
	Original Works.	Repairs.	Total.
Civil Buildings.	Rs.	Rs.	Rs.
Revenue	1,88,766	72,276	2,61,042
Customs	913	6,162	7,075
Salt	14,874	...	14,874
Ecclesiastical	20,910	22,788	43,698
Educational...	1,94,026	16,540	2,10,566
Government Houses and Residencies	43,375	55,666	99,041
Secretariat	10,703	2,543	13,246
Public Works	5,489	17,469	22,958
Charitable Institutions	62,523	27,903	90,426
Miscellaneous	20,904	16,784	37,688
Police	53,298	28,234	81,532
Courts	3,57,268	19,379	3,76,647
Jails...	1,59,006	29,241	1,88,247
	11,32,055	3,14,985	14,47,040
Add—Increase under Suspense Balances	31,998	...	31,998
Total ...	11,64,053	3,14,985	14,79,038
Communications.			
Roads, &c.	2,06,727	3,19,805	5,26,532
Bridges	2,23,264	27,031	2,50,295
Total ...	4,29,991	3,46,836	7,76,827
Miscellaneous Public Improvements.			
Improvements to Towns	1,987	3,527	5,514
Water-supply	2,547	1,463	4,010
Harbours and Light-houses	15,877	13,475	29,352
Total ...	20,411	18,465	38,876
Total Works	16,14,455	6,80,286	22,94,741
Establishment	...	...	9,63,438
Tools and Plant	...	...	44,249
Profit and Loss	...	...	196
Grand Total ...	...	...	33,02,624

G. J. MELLISS, Lieut.-Colonel, S.C.,
Examiner of Public Works Accounts.

BOMBAY: PRINTED AT THE GOVERNMENT CENTRAL PRESS.